140

सर्व शिक्षा अभियान
सब पढ़ें सब बढ़ें

Teachers' and Students' Time-on-Task in Primary and Upper Primary Schools

Synthesis Report

(Assam, Haryana, Maharashtra, Karnataka & Orissa)

Research, Evaluation and Studies Unit
Technical Support Group
Sarva Shiksha Abhiyan
EdCIL (India) Limited
2010

सर्व शिक्षा अभियान
सब पढ़ें सब बढ़ें

Ref

Teachers' and Students' Time-on-Task
in
Primary and Upper Primary Schools

Synthesis Report

(Assam, Haryana, Maharashtra, Karnataka, Orissa)

For Acc.
SCERT library
20/6/11

Research, Evaluation and Studies Unit
Technical Support Group
for
Sarva Shiksha Abhiyan
EdCIL (India) Limited

2010

[illegible]
[illegible] 21. 6. 2011
[illegible] 14552

14552

Project Team

(a) Consultants

1. Prof. ABL Srivastava, Chief Consultant
2. Prof. R. R. Saxena, Sr. Consultant
3. Shri O. P. Arora, Sr. Consultant
4. Dr. (Ms) Neeru Bala, Sr. Consultant

(b) Support Staff

1. Ms. Nidhi Bali
2. Ms. Babita Rai
3. Ms. Preeti Singh

State	State Co-ordinator
Assam	Dr. U. Deka, Director, SCERT
Haryana	Dr. Yogesh Vaishist, Lecturer, SCERT
Karnataka	Mr. C. S. Swamy, Director, DSERT
Maharashtra	Shri V. N. Shukla, Dy. Director, MSCERT
Orissa	Dr. B. K. Praharaj, Deputy Director Administration, TE& SCERT

Printed at : Chandupress, New Delhi - 110092

अंशु वैश्य
सचिव
ANSHU VAISH
SECRETARY

सत्यमेव जयते

भारत सरकार
मानव संसाधन विकास मंत्रालय
स्कूल शिक्षा और साक्षरता विभाग
नई दिल्ली - 110 115
Government of India
Ministry of Human Resource Development
Department of School Education & Literacy
124 'C' Wing, Shastri Bhavan, New Delhi-110 115
Tel. : 23382587, 23381104 Fax : 23387859
E-mail : secy.sel@nic.in

FOREWORD

Improving quality of education is a major challenge faced by the country. This challenge is being addressed through decentralized and context specific is supplemented by achievement surveys, special studies and other devices of quality monitoring.

What students learn in the classroom depends to a large extent on what teachers and students do in the classroom. A study on Time-on-Task of students identify the broad categories of activities in which students and teachers are engaged, and to ascertain the time spent on these activities.

The study was undertaken in five states namely, Assam, Haryana, Karnataka, Maharashtra and Orissa by the Research Evaluation and Studies Unit (RESU) of EdCIL's Technical Support Group for Sarva Shiksha Abhiyan in undertook the task of data collection, data preparation and drafting fo state reports under the guidance of RESU.

Prof. A.B.L. Srivastava, Prof. R.R. Saxena, Shri O.P. Arora and Dr. Neeru Bala of RESU, Technical Support Group planned, coordinated, undertook data analysis and prepared the final synthesis report of the study, with support from the Research Advisory Group comprising Prof. A.K. Sharma, Prof. Snehlata Shukla, Prof. C.S. Nagaraju, Dr. Sushmita Dutt and Ms. Venita Kaul.

I am grateful to the members of the RESU team, Directors/ Principals and faculty members of the SCERTs and DIETs and members of the Research Advisory Group of the project for their guidance and valuable suggestions.

(Anshu Vaish)

सर्व शिक्षा अभियान
सब पढ़ें सब बढ़ें

PREFACE

Under Sarva Shiksha Abhiyan, which is a flagship programme of the Government of India launched in 2001 for achieving Universalisation of Elementary Education, several initiatives have been taken to ensure that all children in the age group 6 to below 14 attend school and teaching-learning in classrooms is of satisfactory quality. The quality to a large extent depends on how the teachers teach and what the students do in the class. In order to assess this in an objective manner a time-on-task study was needed to provide information on the time spent by the students on different learning activities in the class. As these activities are related with those of the teacher teaching the class, time spent by teachers on different activities inside the class had to be a part of the study.

This study was conducted in five states in collaboration with SCERTs. A sample of 100 schools spread over 10 districts in each state was selected for observation of classrooms and collection of other data. Classes II, IV and VI of different subjects were observed for this study. The DIETs of the selected districts in each state helped in collecting the needed data.

For this study, selected DIET faculty members who acted as investigators were provided training in observing classes and recording their observations of the activities of teachers and students on an observation sheet at intervals of 3 minutes. Various possible activities of both teachers and students were listed in the sheet; in a class of 30 minutes duration, 10 such sheets had to be used to record their observations. For students, the observation was in terms of the approximate number of students of the class who were participating in any activity at a given moment. This method was adapted from that of Jane Stallings who had used it in some other countries and which was the basis of a Time-on-Task study conducted by the World Bank in three states of India in 2006.

It is hoped that this study will provide some insight into how the teaching-learning time in classrooms is utilized by the teachers and students. Necessary measures may be taken to promote activity based learning so that teachers spend more time on student-centric teaching activities and students devote more time to active learning rather than to passive learning or remaining off-task in the class.

I am grateful to my colleagues, Dr. R.R. Saxena, Dr. Neeru Bala and Shri O.P Arora who helped in training the investigators in the different states and later in analysis of data and preparation of this report at the national level. The contribution of the concerned faculty members of SCERTs and DIETs of the five states is also gratefully acknowledged.

- ABL Srivastava

EXECUTIVE SUMMARY

1. This study was undertaken essentially to find out what the teachers and students in primary classes do when they are in the classroom and how much time they devote to different teaching-learning activities of the class. The study required observation of classrooms and recording what the teacher and students in a class are doing at different points of time. The main objective of the study was to find out the broad patterns of tasks or activities performed by the teachers and the students of primary and upper primary classes and the proportion of time spent by them on these activities during the class period. The need for such a study was felt for assessing objectively the time of teachers and students that is properly utilized in school and during a teaching period and the time that is wasted or utilized in less efficient manner.

2. The study was conducted during 2007 covering government and local body primary and upper primary schools of Assam, Haryana, Karnataka, Maharashtra and Orissa to estimate the time that teachers and students spend on learning and other activities in school.

3. The study is based on a sample of 100 schools in each of the aforesaid states. First, 10 districts were selected from different regions of each state and next, 10 schools were selected from each sampled district by adopting random sampling procedure.

4. Students' activities outside classroom were observed three times (i) within an hour of opening of school, (ii) after recess, and (iii) within an hour of school closing time. For this purpose, students' activities were divided into 3 broad categories: Curricular, School management and others such as playing, socialising, being idle, etc.

5. For estimating time spent on different activities inside classroom, one class of each of the following grades and subjects were observed in the sampled schools.

Grade	Subject
II	language and mathematics
IV	language, mathematics and EVS
VI	language, mathematics, science and social studies

6. Each class of 30 minutes duration was split into 10 equal parts of three minutes each. The first minute was used for observing students' and teachers' activities and the remaining two minutes were used for recording the activities of teachers and students in the class. A chart in which 17 activities of teachers and 19 activities of students were listed was used to mark the activity or activities taking place at a particular moment (snapshot) when the observation was made.

7. The data so collected were analysed to find out the percentage of time spent by teachers on different activities and the average time spent by students, individually or in groups, on different activities.

8. In addition, a sub-sample of about 20 schools was selected to explore the association of scholastic achievement of grade IV students (226 to 536 students

in each state) separately in language and mathematics, with teachers' and students' activities within the classroom. The locally available learning achievement tests were used for this purpose.

Instructional Days, Working Hours and Time Spent on School Assembly and Recess

9. According to National Curriculum Framework – 2005 of NCERT, a school needs to have 200 instructional days and to work for 6 hours a day. Except in Assam, the number of days schools actually functioned during 2005-06 in the four states varied from 228 days in Orissa to 240 days in Karnataka. The school working hours were 6 hours in Haryana and Orissa whereas the same were a little more than 6 and half hours in Karnataka and Maharashtra. The schools in Assam actually worked for 249 days for average of 5 hours and 18 minutes per day. The loss in daily instructional time of about 42 minutes got compensated by greater number of working days in Assam.

   The findings are based on pooled up data of 499 schools of the 5 states in which this study was conducted.

Teachers' Time in School

10. On an average, 18 minutes were spent on morning assembly and 36.5 minutes on recess during which mid-day meal was served to students.

11. According to teachers, they did not teach on 7.9% of total working days because they were on leave for 4.1% of the total working days; on training for 2.3% days; on duty elsewhere related or unrelated to education for 1.0% day and were busy with administrative work for 0.5% day.

12. During school hours, teachers' spent [illegible]9% of their time on curricular activities of which 64.6% time was spent on classroom teaching, 7.4% on giving or correcting homework, 6.2% on evaluating answer books, 4.9% on lesson planning and [illegible]% on remedial teaching.

13. According to the teachers, of the 12.[illegible] of their time in school that was spent on non-teaching activities, they spent 5.5% [illegible] on mid-day meals, 2.8% on maintenance of attendance or other registers, 2.1% [illegible] supplying of data or other information and 1.7% on activities other than these.

Students' Activities Outside Classroom

14. During the first hour of opening of schools [illegible] in 81% schools students were found to [illegible] attending classes. Only in 6.4% schools some students were found engaged [illegible] curricular activities outside the class[illegible] 11.0% schools; some were engaged [illegible] school management tasks such as cleaning the premises in schools and in 13.2% schools some were engaged in other activities (playing, socialising, remaining idle, etc). In some of these schools, two or more of these activities were going on simultaneously.

15. After recess, participation of students in curricular work, school management tasks and other activities outside classroom was observed in only a small number of schools - 22, 41 and 71 schools respectively. In 18.6% schools, a few students did not go to their classes immediately after the recess.

16. The number of schools in which students were found outside their classes during the one hour time just before closing time of school was 99, which is about 20% of total schools. In these schools, some students were engaged outside the classroom in curricular work (in 33 schools), some in school management related tasks (in 46 schools) and some in other activities (in 72 schools). In some of these schools, two or more activities were going on simultaneously.

Teaching Strategy in Multi-grade Environment.

17. Percentage of multi-grade classes in grade II varied from 27.3% in Assam to 63% in Karnataka. Percentage of students in multi-grade classes was the highest (46.3) in Karnataka and lowest (19.4) in Assam. Percentage of multi-grade classes in grade IV was slightly less than that in grade II.

18. Teaching strategy generally adopted by the teacher in multi-grade classes of language and mathematics was as follows: while teaching grade II, in more than 95% classes of each state, some assignment was given to students of other grades except in Haryana and Karnataka. In more than 70% of these classes, students of other grades were doing some assigned work. In Haryana, teachers taught the same subject simultaneously to all the grades but asked questions of different difficulty levels suited to the grade in 15.8% language classes and 17.5% in mathematics classes. The corresponding figures for Karnataka are 9.1% and 6.7% respectively.

19. In multi-grade situation when the teacher was teaching grade IV, in more than 80% classes in all the states, some assignment was given to students of other grades.

20. Students of other grade in these classes were engaged in doing some assignment in more than 86% classes in all the three subjects in Assam, Maharashtra and Orissa, but in Haryana and Karnataka, this percentage was less (between 65.6% to 84.6%). Students also sat quietly doing nothing or playing games in some of the classes, varying from 2.5% to 13.0%. Besides, students of other grades were also found learning on their own in 1.7% to 16.7% schools with Assam as an exception, where students were not found to be learning on their own in any class.

Classroom Teaching Environment

21. Effectiveness of instruction depends to some extent on how teacher communicates and his/her quality of speech. In the study, investigators observed the speech of teachers and noted their observations. In 51% to 70% classes of grade II, teachers' quality of speech was rated as 'very good' in all the states except in Assam (24.3%). Similarly teachers' pronunciation was rated as 'fully correct' in over 70% classes in all the states except in Assam where the same was only 60%. The position remains almost the same for grade IV and grade VI.

22. Teachers' behaviour with students was observed as it is an important aspect of classroom environment. Friendly and informal behaviour of teachers with students in grade II, classes was found in 52.3% cases in Assam and 83% in

Karnataka. In other states this percentage was between 52% and 83%/. The same for grade IV varied from 58.1% in Assam to 88.8% in Maharashtra. The position in this respect was almost the same for grade VI. Apparently, in Assam teacher behaviour was less friendly with students in relatively more classrooms compared to other states.

Teachers' Activity in Classroom

23. The following 17 teachers' classroom activities that were identified for this study, were broadly classified into 5 categories (i) student centric activities (ii) teacher centric activities (iii) supportive instructional activities (iv) class management and (v) Off task activities.

    (i) Student Centric Activities – Providing feedback, Asking Questions, Replying to Questions, providing clarification, Demonstrating/ helping in use of TLM/ TLE and Project work/ creative activity.

    (ii) Teacher Centric Activities – Lecturing, Writing on blackboard, Reading from book, Giving dictation and Observing or supervising students' activities.

    (iii) Supportive Instructional Activities – Giving homework, Correcting homework or test papers and Encouraging one or more students.

    (iv) Class Management Activities – Punishing scolding/ students and Class management.

    (v) Off Task – Attending to visitor, Being idle or out of classroom, Social interaction and Personal work.

    The findings on the percentage f time devoted to different activit s or sets of activities are based on t pooled up data of all the 5 stat However, some state-specific findin are also given.

24. On the average, 29% of the teachers' tim in classroom was spent on student centr activities. It was 27.6% for grade II, 26.2 for grade IV and 30.8% for grade VI.

    ❖ In grade II, time spent by teachers o student centric activities was observe to be more in mathematics classes in all the states except in Haryana where the same was a little more in language class than that in mathematics class. In grade IV the time spent on these activities was found to be higher in EVS followed by mathematics classes in all the states except in Haryana where it was 17.1% in mathematics, 19.3% in language and 24.6% in EVS.

    ❖ Among all the five student centric activities, 12% or more of teacher's total time in classroom was spent on 'asking questions' which was followed by 'demonstrating and helping students in use of TLM' which varied from 3.9% in grade VI language classes to 12.6% in grade VI social studies classes.

25. Of the total time spent by teachers in classroom, 53.3%, 56.3% and 55.9% time was spent on teacher centric activities in grade II, IV and VI respectively.

- Percentage of time spent on teacher centric activities was higher in language class (57.9%) than in mathematics class (48.7%) of grade II. In the case of grade IV, distribution of time spent on such activities across the three subjects shows that the time spent on teacher centric activities was the lowest in mathematics class (52.1%) and highest in language class (60.9). In grade VI, maximum time (more than 58%) on this activity was devoted in language class in all the states as compared to time devoted on other subjects. Lowest time was given to teacher centric activities in science class of Haryana and Karnataka whereas it was so in social studies class of the remaining three states.

- Out of 5 teacher centric activities, maximum time in language class across grades was spent on lecturing/ verbally explaining followed by writing on blackboard and explaining, reading from book and observing and supervising classes. In mathematics classes across grades, maximum time was spent on writing on blackboard followed by lecturing/explaining and observing or supervising the classes. In EVS class of grade IV and social studies class of grade VI the common teacher centric activities were lecturing, explaining and writing on blackboard.

26. Percentage of time spent by teachers on 'supportive instructional activities' was 14.1% in grade II, 13.6% in grade IV and 10.5 in grade VI.

- Supportive instructional activities included three activities: giving homework or assignment, correcting homework or test paper and encouraging/ praising students. Most of the teachers' time was spent on giving homework or assignment across the subjects and grades.

27. Percentage of time spent by teachers on class management activities and being off-task was 2.1% and 2.9% in grade II; 1.5% and 2.4% in grade IV; 1.5% and 2.1% in grade VI respectively. Evidently teachers' remained off-task for not more than 3 percent of their total time. It is possible that the percentage of 'off-task' time of teachers was found to be low due to the presence of investigators in the class.

28. The percentage of time teachers spent on different activities in multi-grade and mono-grade classes did not differ much. Similarly time spent by male and female teachers on different activities also did not indicate any significant gender difference.

    - Classes of regular teachers and para-teachers did indicate some difference in respect of time spent on 5 categories of activities in classroom. Regular teachers (about 28%) spent slightly more time than para teachers (about 25%) on student centric activities whereas para-teachers spent more time on teacher centric activities and supportive instructional activities. In grade II regular teachers remained off task on average 3% of their total time as against 1.4% in case of para-teacher. In the case of grade IV the corresponding figures were 2.0% and 2.6% respectively.

29. On examining the sequence of teacher activities during the period of 30 minutes, it was observed that teachers asked questions or gave homework or assignments generally during the last few minutes of the period whereas use of TLM/TLE, lecturing or verbally explaining, writing on blackboard, explaining and reading from the book was generally during the first half of the period. Frequency of observing or supervising students' activities during the class increased with the passage of time.

Students' Classroom Activities

30. Time spent by students on any activity was determined on the basis of number of students participating in that activity and the time for which they remained engaged in that activity. Further, the 19 activities of students in the classroom identified for the study, were broadly classified in the 5 categories as follows:

    (i) **Set 1 (Active learning) –** Studying on their own; Peer learning/ working in small groups; answering question; seeking clarification, using TLM/ TLE; engaged in project work/ creative activity; doing assignment.

    (ii) **Set 2 (Passive learning) –** Listening attentively to teacher; taking dictation.

    (iii) **Set 3 (Mechanical learning) –** Reading aloud to class/ alone; copying; rote memorization.

    (iv) **Set 4 (Class management) –** Waiting for teachers' attention; being reprimanded; assisting in classroom management.

    (v) **Set 5 (Off task) –** Being un-attentive, cross talking with others; engaged in disruptive activities; entering into or going out of class.

31. Overall, students' time spent on learning activities of Set 1 (Active learning) is about 25% of total student-time. However, there is considerable variation across states; it is least (20.7%) in Haryana and quite high (33.2%) in Orissa whereas it is between 22.8% and 25.4% in the other 3 states.

32. Of the total time of students' classroom activities, time spent on Set 2 (passive learning) activities was 46.9% on an average. That is, time spent on passive learning was maximum as compared to the remaining sets of activities in all the states. Among the states, it is highest (52.8%) Maharashtra and lowest (39.2%) in Orissa.

    - ❖ Students' time spent on passive learning is over 40% in all the grades. It increases gradually from 41.2% in grade II 45.8% in grade IV and further to 53.6% in grade VI. Apparently, there is much more passive learning in upper grades where there is greater use of talk and chalk method of teaching.

    - ❖ It is observed that percentage of students' time in language class on passive learning increased from 44.5% in grade II to 48.4% in grade IV and to 56.9% in grade VI. The same increased from 37.9% in grade II to 39.6% in grade IV and to 47.4% in grade VI in mathematics.

33. The average student-time spent on learning activities of mechanical type (Set 3) is

15.4% of total student- time. It is highest (20.4%) in Haryana and lowest (11.6%) in Maharashtra. Further, it decreases from 18.5% in grade II to 15.7% in grade IV and to 12.7% in grade VI.

34. Overall, the time of students spent on class management (Set 4) is about 5%. It is lowest (2.4%) in Assam and highest (6.5%) in Haryana. Students' time spent on class management activities increases marginally from 4.8% in grade II to 5.0% in grade IV and to 5.3% in grade VI.

The average time when students are off-task is 7.8% of total student-time. It is least (6.5%) in Haryana and highest (10.4%) in Karnataka. Off-task activities of students also indicate the same pattern as that of class management, i.e. maximum time is in grade II (9.1%) which decreased to 8.2% in grade IV and to 6.3% in grade VI.

There are 13 learning activities of students which were classified under the first three sets of activities. viz active learning, passive learning and mechanical learning. Engagement of students in some of the activities is presented below.

- In every class, maximum time (55% in grade VI language) is spent on listening to the teacher or observing attentively what the teacher is demonstrating or doing. The time spent on this activity is more in language class in all the grades compared to mathematics class. This time gradually increases from lower classes to higher classes in both the subjects.
- Much more time is spent on doing assignments in mathematics classes than in language classes in all the grades. Overall, it is about 11% in Mathematics and about 5% in language.
- Time spent on 'listening/ observing' activity increases gradually from grade II to grade VI in both subjects. In language, it increases from 41.6% in grade II to 46.4% in grade IV and to 55% in grade VI; in mathematics it increases form 35.0% in grade II to 37.2% in grade IV and to 44.8% in grade VI.
- Students' time spent on 'reading aloud' is more in language classes in all the grades. It is particularly substantial in grade II (7.7%) language class. In mathematics, there is hardly any 'reading aloud' activity except some in grade II (1.6%).
- Students' time spent on copying or doing some orally given written work is more in mathematics (average 15%) than in language (average 10.4%) in each grade. There is not much variation across grades in this respect.

Remedial Teaching

36. As a part of the study, time spent on remedial teaching, if any, was also assessed. It was found that the percentage of schools where no remedial teaching takes place was quite large in every state and particularly in Orissa. In Karnataka and Maharashtra and, to some extent in Assam and Haryana, teachers provide remedial teaching to weak students mostly by paying them extra attention within the class itself. In a few cases they take extra

class for them within school hours and in a very few cases outside school hours or during vacation or holidays.

Association of Grade IV Students' ScholasticAchievement withTeachers'& Students' Activities inside Classroom

38. Correlational and Regression analysis of data did not reveal any significant association of achievement scores with teacher activities in most of the states. Positive association of language test scores with student centric and teacher centric activities was observed only in Haryana. Further, Off-task teachers' time was found to reduce language achievement scores in Assam and Maharashtra.

39. Contribution to mathematics achievement scores was statistically significant and substantial in the case of student centric activity (Assam), supportive instructional activities (Orissa), and class management activities (Assam and Karnataka). Time spent on these activities contributed to increase in test scores in the states named in parenthesis.

40. In general, there is some association between time spent on the activities that are more conductive to learning and students' achievement level. But the relationship is not strong specially for students' classroom activities and there is no conclusive evidence of the impact of time-on-task on students' achievement. This is so mainly due to the assessment of achievement being done on the basis of what was taught during the year and not on the basis of the subject matter covered in the particular class observed by the investigator. Also, the tests used to measure scholastic achievement were locally available tests and the test scores were influenced by several other factors and not much by what was taught in the particular class while it was being observed.

CONTENTS

S. No.	Contents	Page
	Executive Summary	
1	**Introduction**	
	1.1 The Context	1
	1.2 Conceptual Framework	2
	1.3 Sampling of Schools, Classes and Students	3
	1.4 Regular and Para-teachers	4
	1.5 Availability and Use of TLM/ TLE	4
	1.6 Summary	5
2	**Available Time and its Utilization in Schools**	**7**
	2.1 Prescribed and Actual Days for Schools	7
	2.2 Working Hours of Schools and Time Spent on Morning Assembly and Mid-day Meals	8
	2.3 Teachers' Activities During Working Days	10
	2.4 Students' Activities Outside Classroom	12
	2.5 Summary	15
3	**Condition of Classrooms And Teaching Environment**	**16**
	3.1 Sample for classroom Observation	16
	3.2 Multi-grade Teaching	16
	3.3 Physical Environment at the Place of Learning	21
	3.4 Occurrence of Disturbance in Classes and Punishment to Students	24
	3.5 Students Behaviour During the Period of Observation	26
	3.6 Teachers' Behaviour and Mannerism in the Class	28
	3.7 Summary	32
4	**Teachers' Activities In Classroom**	**34**
	4.1 Categorisation of Teacher Activities	34
	4.2 Overview of Time Spent ob Broad Categories of Teachers' Activities in the Class	35
	4.3 Teachers' Time on Different Activities in Primary Classes	35
	4.4 Teachers' Time on Different Activities in Grade VI Classes	38
	4.5 Teachers' Time Spent on Different Activities Across States, Subjects and Grades	41
	4.6 Teachers' Time-on-Task in Multi Grade and Mono Grade Classes	42
	4.7 Time–on-Task of Regular Teachers and Para Teachers for Grade II and IV Classes	44
	4.8 Time–on-Task of Male and Female Teachers for Grade II, IV and VI Classes	46
	4.9 Temporal (Snapshot to Snapshot) Variation in Teachers' Activities	48
	4.10 Summary	52
5	**Students Time on Task in Classroom**	**54**
	5.1 .Categorization of Students' Activities	54
	5.2 Estimation of Time Spent on Different Activities	55
	5.3 Time spent on different types of activities (overall for 5 states)	55
	5.4 Difference in Pattern of Activities Across Subjects and Grades	56

	5.5 Student-Time Spent on Different Types of Activities in the Class in Five States	57
	5.6 Student-Time Spent on Different Types of Activities in Different Grades in Five States	58
	5.7 Distribution of Student-Time on Different Sets of Activities in Different Subjects of Grades II, IV and VI in Five States	60
	5.8 Distribution of Students' time on different learning activities in language and mathematics in different grades (overall for 5 states)	62
	5.9 Percentage of Students' Time Spent on Different Types of Activities in Mono-Grade and Multi-Grade Classes (overall)	64
	5.10 Correspondence between Teacher Activities and Student Activities	66
	5.11 Summary	70
6	**Remedial Teaching**	**72**
	6.1 Provision for Remedial Teaching in Schools	72
	6.2 Modes of Remedial Teaching During Working Days	72
	6.3 Remedial Teaching During Holidays or Vacations	74
	6.4 Feedback from teachers on remedial teaching	75
	6.5 Summary	77
7	**Relationship of Classroom Activities with Students' Scholastic Achievement**	**78**
	7.1 Context	78
	7.2 Definitions and Descriptive Statistics of variables	79
	7.3 Distribution of Achievement Scores in Language and Mathematics	84
	7.4 Analysis of Effect of Classroom Activities on Achievement	84
	7.5 Summary	88
	Annex – A Detailed Tables of Teachers' & Students' Time Spent on Activities in Classroom	**90**
	Table A1: Teacher time (in %) spent on different activities of category 1 according to states, subject and grades	90
	Table A2: Teacher time (in %) spent on different activities of category 2 according to states, subjects and grades	91
	Table A3: Teacher time (in %) spent on different activities of category 3 according to states, subject and grades	92
	Table A4: Percentage of students' time spent on individual activities for Assam	93
	Table A5: Percentage of students' time spent on individual activities for Haryana	94
	Table A6: Percentage of students' time spent on individual activities for Karnataka	95
	Table A7: Percentage of students' time spent on individual activities for Maharashtra	96
	Annex B: Coding Procedure for TS4 Schedule	97
	Annex C: Schedules Used for Data Collection	100
	TS – 1	103
	TS - 2	106
	TS – 3 A	108
	TS – 3 B	110
	TS – 4	112
	TS - 5	113

Chapter 1

INTRODUCTION

1.1 The Context

"The new thrust in elementary education ll emphasise two aspects:. (i) universal olment and universal retention of children to 14 years of age, and (ii) a substantial rovement in the quality of education" (*The ional Policy of Education (1986), Para 5.5.*

In order to implement the above policy, Government of India in collaboration th state governments, launched in 2001- a massive programme of universalizing mentary education which aims to provide ful and relevant education to all children in 6-14 age group by 2010. This programme, signated as Sarva Shiksha Abhiyan (SSA), is acterized by context specific planning and ocess based, time bound implementation gy. The goals[1] of the programme are as ws:

Enrolment of all children in school, Education Guarantee Scheme Centres, Alternate Schools, 'Back-to-School' camps etc by 2005.

ii) Retention of all children till completion of the upper primary stage by 2010.

iii) Bridging of gender and social category gaps in enrolment, retention and learning.

iv) Ensuring that there is significant enhancement in the learning achievement level of children at the primary and upper primary stage.

The first and the second objectives refer to quantitative aspect of UEE especially in the county's diverse geographical milieu, the third refers to equality under heterogeneous social and cultural set up and the fourth objective is concerned with quality of teaching-learning in schools. J.P.Naik[2] described equality, quality, and quantity as the illusive triangle of Indian education prior to formulation of NPE 1986. The situation in the country has changed considerably in the favour of achieving UEE because of amendments in the country's Constitution and specific programmes initiated under implementation strategy of SSA. The issue of equality is being addressed by identifying districts having gender and social gap and then formulating district specific strategy for inclusion in the state's annual work plan. The issue of improvement of quality of education is addressed through decentralized and context specific planning. It is periodically monitored by using a very comprehensive methodology covering most aspects of classroom instruction. Besides, SSA, in its strategy, does have provision of research based inputs. In this context, it was considered worthwhile to supplement the existing quality monitoring by taking up a study for estimating the time that students spend on learning or other activities in school. The present study with this intent was undertaken during 2007 in govt/ local body primary and upper primary schools of Assam, Haryana, Karnataka, Maharashtra and Orissa for which state SCERT and DIETs shouldered the responsibility of data collection and data preparation.The specific objectives of the study are given below.

---

[1] Sarva Shiksha Abhiyan- Framework for implementation (Amended till 31st March, 2008), Ministry of Human Resource Development, Department of School Education & Literacy.

[2] National Curriculum Framework 2005, NCERT (p.8)

- To observe and describe various group and individual tasks/activities of students during school hours.
- To observe and record teachers' activities in class and the purpose of each activity and to relate it to the learning and other activities of students'.
- To assess the time spent on active learning and other activities by students inside and outside the classroom during the school hours.
- To find out the difference, if any, between activities of boys and girls; students of different classes and students studying in Government or Local Body schools in both urban and rural area.
- To find out how remedial teaching is done and how much time spent by teachers and students on remedial teaching tasks.
- To identify broad categories or patterns of tasks/activities and to find if there is any association between such patterns and scholastic achievement of students

1.2 Conceptual Framework

The annual school calendar is presently decided at the state level. The National Curriculum Framework-2005 (NCF-2005)[3] recommended that its planning should be more decentralized so that it is closer to the calendar of local activities and climate. The NCF-2005[4] recommended 200 instructional days during a year and 6 hours per day as working time for schools. The study would attempt to verify how far these norms are adhered to in schools.

During school year, schools attempt to complete the prescribed course. However, what the students learn in school depends on several factors, many of which are school and teacher related factors. These factors affect not only students' learning in academic subjects but also personality development and achievement in various co-curricular areas. Much depends on how teachers and students spend their time in various teaching-learning activities in school. Apart from the time spent on active teaching by teachers and how they teach, an important dimension of the teaching-learning that takes place in school, is "what the students do and how much time they spend on different types of learning and other related or unrelated activities in school" For the purpose of this study, students' activities have, therefore, been broadly classified as out-of-classroom activities and inside classroom activities.The out-of-classroom activities include curricular/ co-curricular activities, activities related to management of school and off-task activities. Time spent on morning assembly and on recess or mid-day meals is also counted.

Inside classroom, activities of students are part of continuous interaction between students and the teacher and are generally dependent on what the teacher does. In this study, teachers' and students' activities in the class were observed by an observer using a modified version of classroom observation method developed by Jane A. Stallings. Details of the observation procedure and schedules used for data collection are enclosed in Annex 1. Analysis to study the relationship of these activities with students' achievement was also done to fulfill the objective (vi) of the study. For the purpose of classroom observation, it was decided to observe one class of the following subjects of grades II, IV and VI.

---

[3] National Curriculum Framework 2005, NCERT (p.96)

[4] National Curriculum Framework 2005, NCERT (pp.95 & 97)

Grade	Subjects Observed			
II	Language (1)	Mathematics(2)		
IV	Language (1)	Mathematics (2)	EVS/Social Studies (3)	
VI	Language (1)	Mathematics (2)	Science (3)	Social Studies (4)

ach class was observed for 30 minutes. uration was split into 10 equal parts, each e minutes duration.The first minute of the inutes was used for observing students' chers' activities and the remaining two s were used for recording the observations e schedule specifically developed for th urpose. The observation in each slab of th minutes was called a snapshot. There are apshots for each class. In order to ensure vation of all the students' and teachers' ies during one minute and recording correctly in the subsequent two minutes, gators were given hands-on practice in a g programme of 4 to 5 days by taking o schools for practice in filling the TS-4 le under the supervision of the trainer. training helped in minimizing recording . Further, locally available achievement suitable for grade IV in language and ematics were used for the purpose of testing and exploring the association between st ents' and teachers' time spent on different activities and their achievement in the tests.

Apart from observing the activities of teachers and students for each snapshot, the investigators were also required to assess the class as a whole with the help of the teacher, to find out how many in the class were active learners and how many were in different or passive learners. Thus the percentage of active learners was determined in each class. This exercise was done only for grade IV.

1.3 Sampling of Schools, Classes and Students

The target population for the study in each state consisted of primary and upper primary schools under government or local body management.The DISE database of 2005-06 was used as the sampling frame. The study used two-stage stratified sampling.The first stage unit was district.The districts in each state were arranged according to socio-cultural regions in the state.A sample of 10 districts from each state was selected by using simple circular systematic sampling method. The second stage sampling unit was school. Schools in each sampled districts were stratified according to schools location (rural and urban) and school category (primary and upper primary). From each district, a sample of 10 schools was selected using the simple circular systematic sampling procedure. Table 1.1 shows the number of schools in different categories in the sample of 10 schools in each district. Of the 100 sampled schools in each state, a sample of 20 schools having grade IV was randomly selected by giving due representation to rural and urban areas for the purpose of administering the language and mathematics achievement tests.A sub-sample of 10 schools in each state (one in each district) were selected for capturing students' and teachers' activities inside classroom through videogrphy. The selection of schools, conforming to the above mentioned design was undertaken centrally by Research, Evaluation & Studies Unit of EdCIl's Technical Support Group for SSA, Ed. CIL

Table 1.1: Allocation of sample size to different strata within a district

Area	School category		Total
	Primary	Upper Primary	
Rural	4	3	7
Urban	2	1	3
Total	**6**	**4**	**10**

There were, however, some deviations in allocation of schools to different strata due to actual distribution of schools within a district in these 4 strata being different. Table 1.2 shows the sample size of schools, classes, teachers and students. The sample of schools is short by one school in the case of Assam due to reasons beyond control. The table shows total number of classes that were observed in each grade. These classes were of different subjects. For example, of the 932 classes of grade II that were observed, 466 were of mathematics and 466 of language.

Table 1.2: Sample of schools, classes observed, teachers and students in primary and upper primary schools

Sampling Units	Assam		Haryana		Karnataka		Maharashtra		Orissa		Overall		
	Pr.	U. Pr.	Pr.	U. Pr.	Pr.	U. Pr.	Pr.	U. Pr.	Pr.	U. Pr.	Pr.	U. Pr.	T[illegible]
Schools	58	41	56	44	58	42	53	47	60	40	285	214	[illegible]
Grade II	116	16	112	88	116	84	106	94	120	80	570	362	[illegible]2
Grade IV	174	24	165	132	171	126	159	141	180	120	849	543	1[illegible]2
Grade VI	...	164	...	168	...	160	...	160	...	160	...	812	8[illegible]2
Teachers	128	144	126	243	116	205	96	167	168	173	1092	634	9[illegible]2
Students	5071	7103	10915	14269	3744	10932	5710	9988	8200	10443	33640	52735	863[illegible]5

1.4 Regular and Para-teachers

Of the 2828 teachers whose classes were observed, 12.1% teachers were para-teachers. The proportion of para-teachers in the states of Haryana (23%) and Orissa (21.7%) was more compared to Assam (5.9%), Karnataka (0.9%) and Maharashtra (9.1%).

Table 1.3: Percentage of para-teachers among the teachers whose classes were observed

School category	Assam	Haryana	Karnataka	Maharashtra	Orissa	Over[illegible]
All	5.9	23	0.9	9.1	21.7	12.[illegible]
Primary	5.5	13.5	0	8.3	20.8	9.62
Upper Primary	6.3	28	1.5	9.6	22.5	13.6
Rural	5.2	25.9	1.3	10.2	26.3	13.8
Urban	7.4	16	0	6.5	12.8	8.5

1.5 Availability and Use of TLM/ TLE

Overall, about 11% schools (refer Fig. 1.1) in the five states reported that TLM/ TLE which children could handle in the class was not available. The percentage of such schools was 17.6% in Assam, 20.3% Haryana and below 10% in the other three states. The practice of children handling the TLM was reported by one third or more schools in Orissa (39.9%), Karnataka (33.6%) and Maharashtra (33.1%) In the states of Assam and Haryana, such schools were 20.2% and 11.4% respectively.

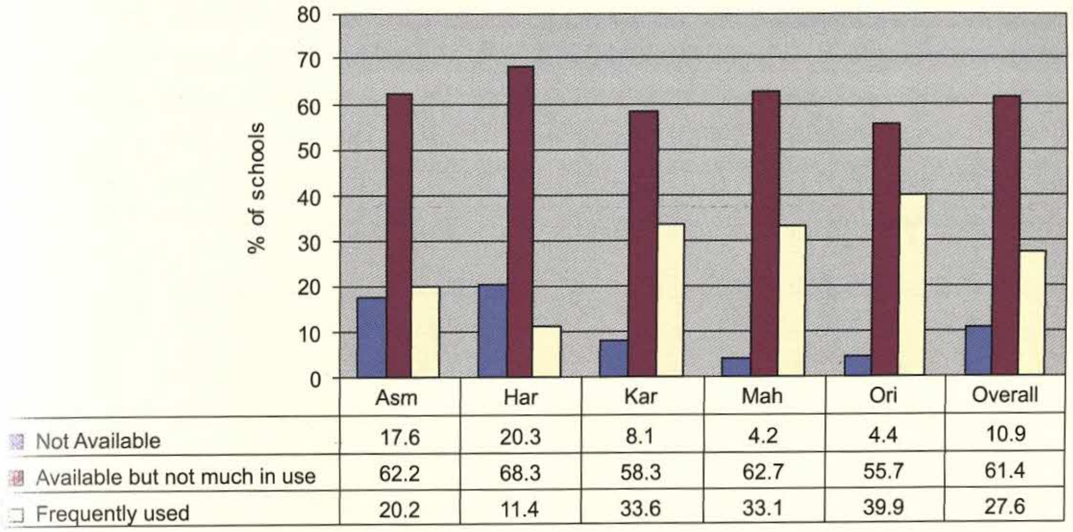


Fig.1.1: Schools according to avlaibility and use of TLM by children

	Asm	Har	Kar	Mah	Ori	Overall
▨ Not Available	17.6	20.3	8.1	4.2	4.4	10.9
▨ Available but not much in use	62.2	68.3	58.3	62.7	55.7	61.4
☐ Frequently used	20.2	11.4	33.6	33.1	39.9	27.6

1. Summary

i) The main intent of the study is to estimate the extent of utilization of learning opportunity within the classroom in the states of Assam, Haryana, Karnataka, Maharashtra and Orissa.

ii) For this purpose, the target population for the study was primary and upper primary schools under government and local body management belonging to the aforesaid states.The study was conducted in sampling mode wherein stratification was used to classify (a) districts into socio-cultural regions (SCR), (b) location of schools (rural or urban) and (c) school category with primary and upper primary classes. The sample in each state consisted of 10 districts and 10 schools within each district. Allocation of sampling units (districts and schools) was done proportionately.

iii) For the purpose of observing 'within classroom' activities, grades II, IV and VI were selected. Regional language and mathematics classes of grade II, regional language, mathematics and EVS/ social study classes of grade IV, and regional language, mathematics, social study and science classes of grade VI were observed.

iv) For the purpose of observation of classroom activities, Snapshot Observation System (SOS), a method of classroom observation devised by Jane Stallings with some modification to suit Indian conditions, was used. The method envisages splitting of total class duration (30 minutes) into 10 equal parts of three minutes for snapshot observation. First minute was used for observation of activities in the classroom and the remaining two minutes for recording of observations. Nineteen student's activities and seventeen teacher's activities were included for the purpose of observations.

v) In this study, 932 grade II classes, 1392 grade IV classes and 812 grade VI classes were observed. In this exercise 86,375 students and 2828 teachers participated. Information was collected on whether the class was taught by a para-teacher or a regular teacher and whether TLM/TLE was available and used in teaching. There were 12.1% para teachers in the sampled schools; their percentage was more (over 20%) in Haryana and much less (below 1%) in Karnataka. Multi-grade teaching environment existed more at primary stage (40.95% in grade II, 36.4% in grade IV and 16.7% in grade VI classes). TLM was available but not much in use in 61.4% schools and was not even available in 10.9% schools.

Chapter 2

AVAILABLE TIME AND ITS UTILISATION IN SCHOOLS

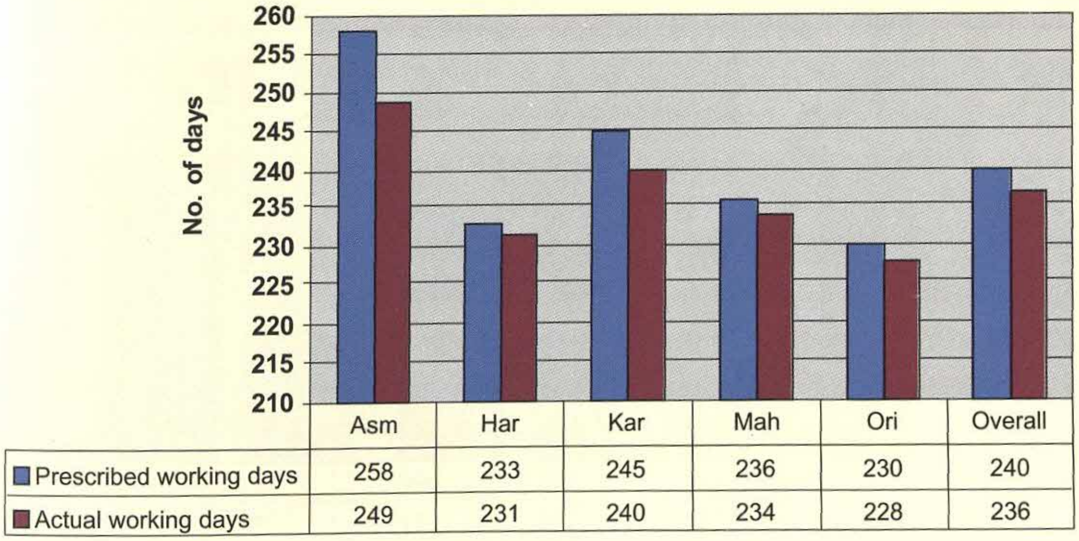
2.1 Prescribed and Actual Working Days for Schools

The school annual calendar is generally d[illegible] at the state level with some flexibility in it [illegible]ke allowance for local events and climate o[illegible]ther conditions. The district or school a[illegible]ties make some modification suited to [illegible] local requirement. According to NCF-2[illegible] a school needs to have 200 instructional da[illegible] For the states covered in this study, the av[illegible]e number of working days prescribed by th[illegible]te authorities varied from 230 in Orissa to [illegible] days in Assam. Number of extra holidays fo[illegible]ools is fixed at the state level but district au[illegible]ities or schools generally have freedom to [illegible]lare holidays on specific occasions. Figure 2.1 shows the number of prescribed working days and actual working days in the five states.

It is observed from Fig. 2.1 that on average, schools availed about 4 extra holidays in the five states which was lowest (2 days) in the case of Haryana, Maharashtra and Orissa and maximum (about 9 days) in Assam. Thus number of actual working days, on the average, was 237 during 2006-07; it varied from 228 in Orissa to 249 in Assam.

Fig. 2.2 shows the number of days schools remained closed due to different reasons. The main reason for closure of schools in Assam, Haryana and Karnataka was local events/ festivals. In the case of Maharashtra and Orissa, the more

Fig. 2.1: No. of prescribed working days and actual working days

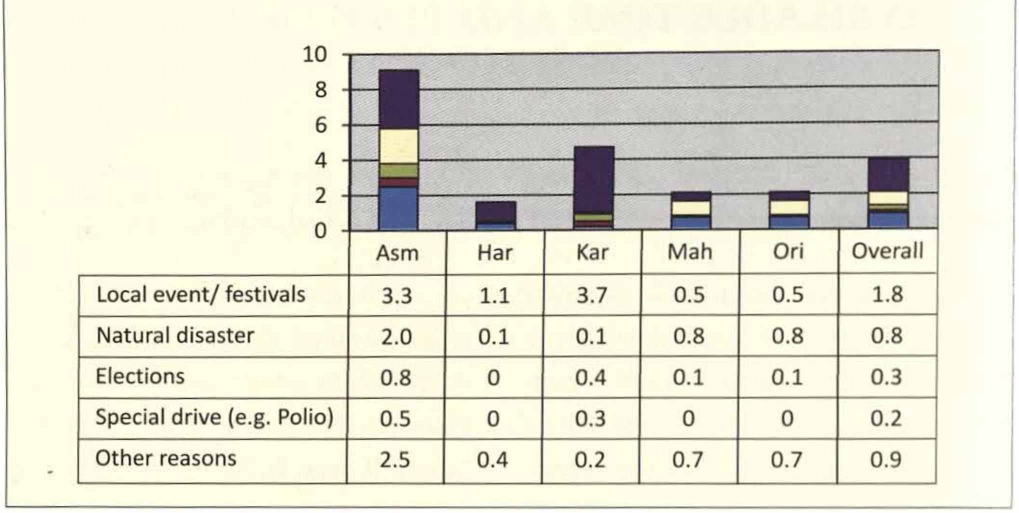


	Asm	Har	Kar	Mah	Ori	Overall
■ Prescribed working days	258	233	245	236	230	240
■ Actual working days	249	231	240	234	228	236

---

[1] NCF-2005: National Curriculum Framework 2005, NCERT (P.96)

Fig. 2.2: Reasons for which schools closed on working days



	Asm	Har	Kar	Mah	Ori	Overall
Local event/ festivals	3.3	1.1	3.7	0.5	0.5	1.8
Natural disaster	2.0	0.1	0.1	0.8	0.8	0.8
Elections	0.8	0	0.4	0.1	0.1	0.3
Special drive (e.g. Polio)	0.5	0	0.3	0	0	0.2
Other reasons	2.5	0.4	0.2	0.7	0.7	0.9

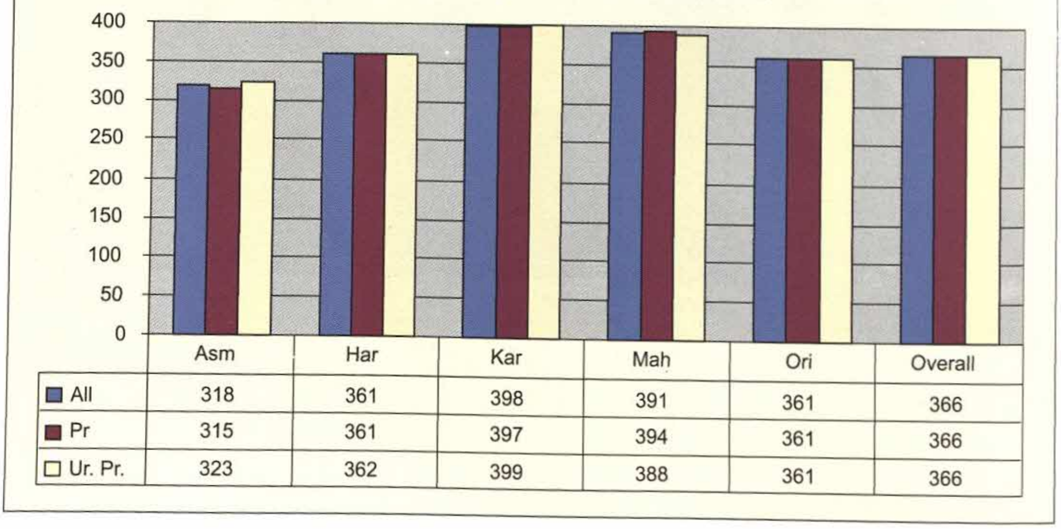
prominent reason was some natural disaster. On about one fourth (0.9) of the total days (4.0) on which schools remained closed on working days, the reasons were other than elections, natural disaster, local festivals and involvement of teachers in special drives (e.g. for polio).

2.2 Working Hours of Schools and Time Spent on Morning Assembly and Mid-day Meals

On the average, schools in the five states work for 6.1 hours (366 minutes) during a day. It is to be noted that Assam state is an exceptio here schools generally work for average 5.3 ours (318 minutes). With larger number of w king days, as evident from Fig. 2.1, the great time loss in daily instructional time (about 42 n utes per day) gets compensated by longer nur er of working days in the case of Assam. Th was hardly any difference between working h rs of primary and upper primary schools

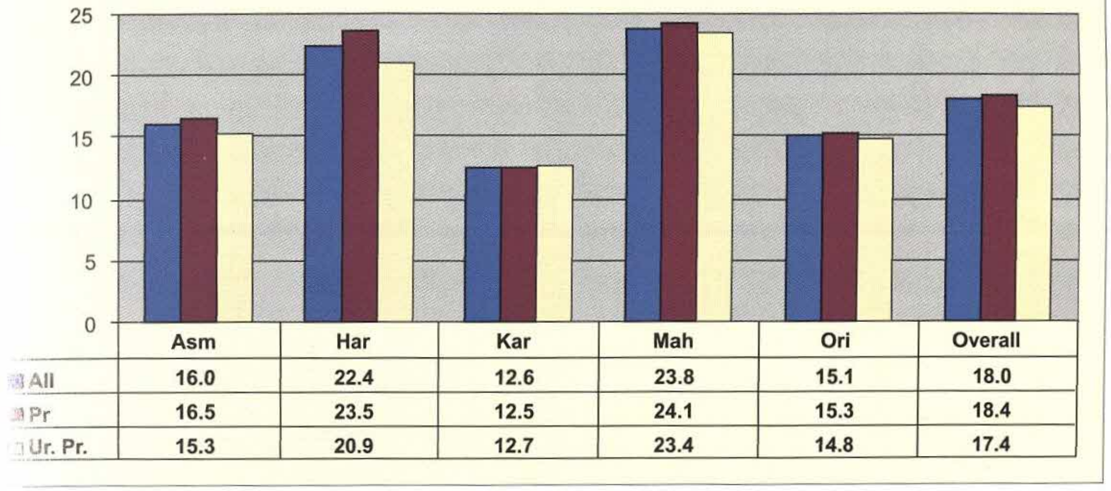
The average time spent on m ning assembly in five states (presented in Fig. 2 was

Fig. 2.3: Average working hours of schools (in minutes)



	Asm	Har	Kar	Mah	Ori	Overall
■ All	318	361	398	391	361	366
■ Pr	315	361	397	394	361	366
□ Ur. Pr.	323	362	399	388	361	366

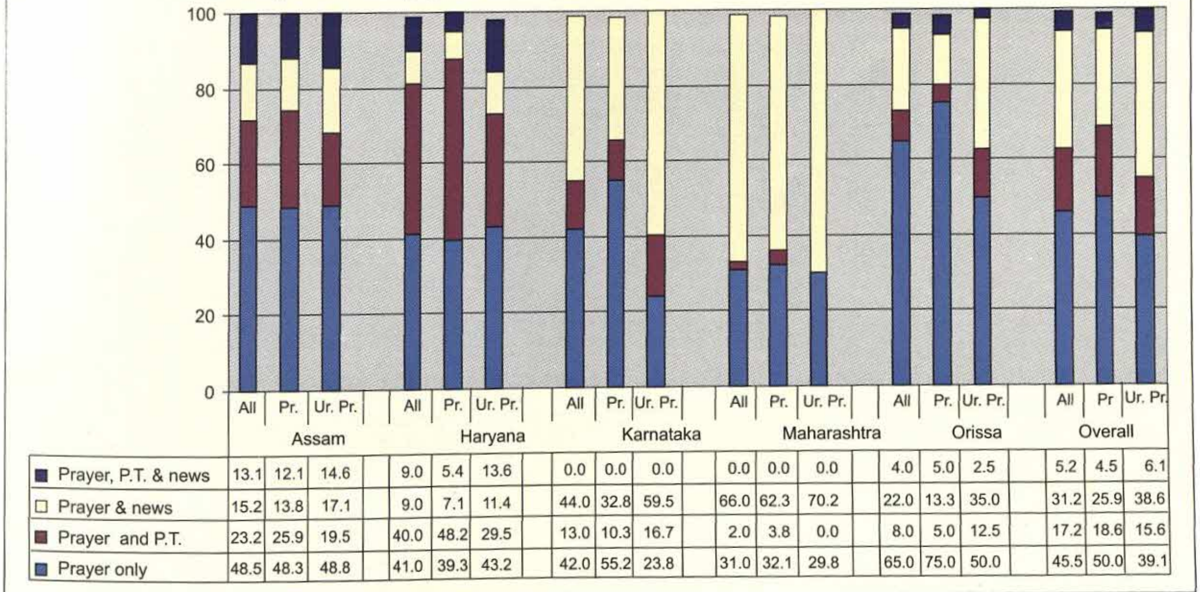
Fig. 2.4: Time spent (in minutes) on morning assembly



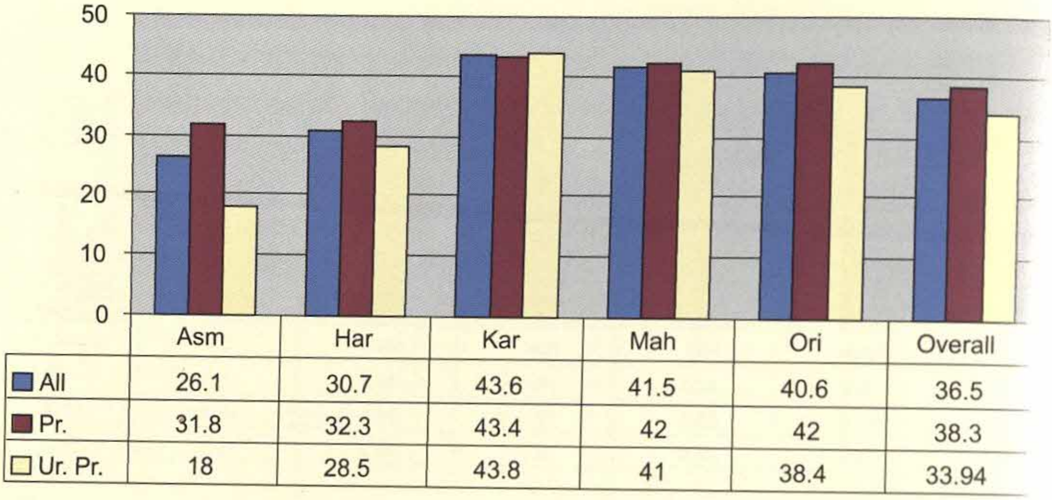
ab minutes. It varied from 12.6 minutes in Ka ka to about 24 minutes in Maharashtra. Th is no discernible difference between pri y and upper primary schools in respect of spent on this activity.

g. 2.5 presents distribution of schools acc ing to activities undertaken during mo g assembly. About 46% schools included only 'prayer' in the morning assembly; another 31.2% schools spent morning assembly time for 'prayer combined with reading of news'. In the case of primary schools, 50% had 'prayer only' whereas this percentage was less (39%) in the case of upper primary schools and about one fourth had 'both prayer and news'. Majority of schools (66%) in Maharashtra had prayer as well as sharing of news in morning assembly.

Fig.2.5: Percengage of schools according to activities in morning assembly



Fig, 2.6: Time (in minutes) spent on mid-day meals



	Asm	Har	Kar	Mah	Ori	Overall
■ All	26.1	30.7	43.6	41.5	40.6	36.5
■ Pr.	31.8	32.3	43.4	42	42	38.3
□ Ur. Pr.	18	28.5	43.8	41	38.4	33.94

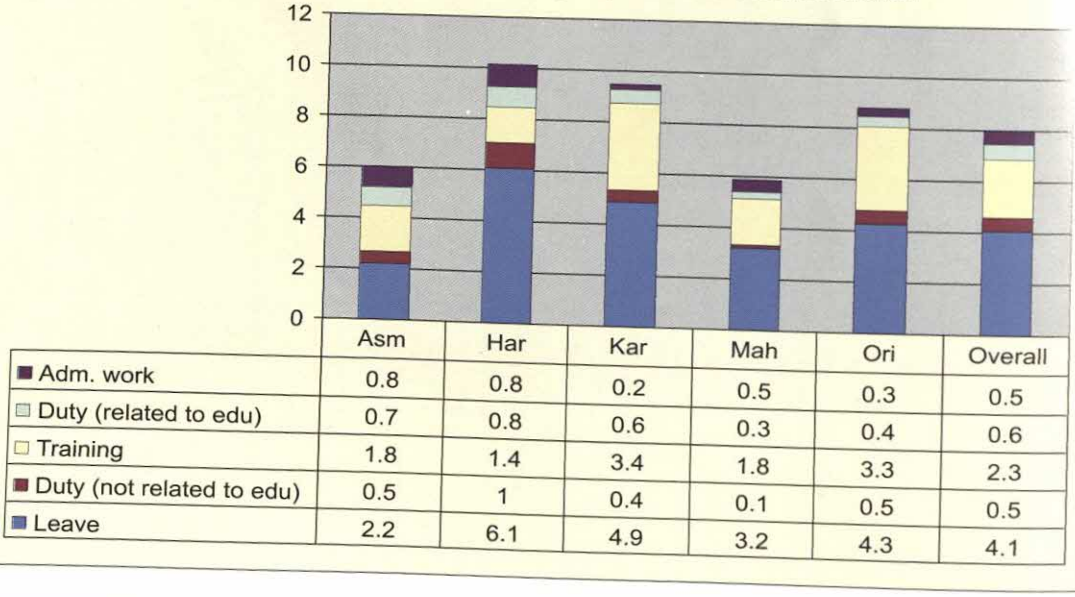
Besides classroom teaching and morning assembly, there is recess which is generally used to provide mid-day meal to students. On an average, about 36 minutes were used for this purpose. Fig. 2.6 indicates that maximum time (43.6 minutes) on this activity was devoted in Karnataka and minimum time (26.1 minutes) in Assam. There is a wide gap between primary and upper primary schools in respect of time spent on this activity only in the case of Assam.

2.3 Teachers'Activities during w rking days

Of the total working days, a eacher generally remained on leave for 4.1 % lays in the five states which varied from 2.2% Assam to 4.9% in Karnataka. Percentage of d spent on training during 2006-07 varied fron 4% in Haryana to 3.4% in the case of Karnat

Overall, 8% of total working d were spent on activities other than teaching.

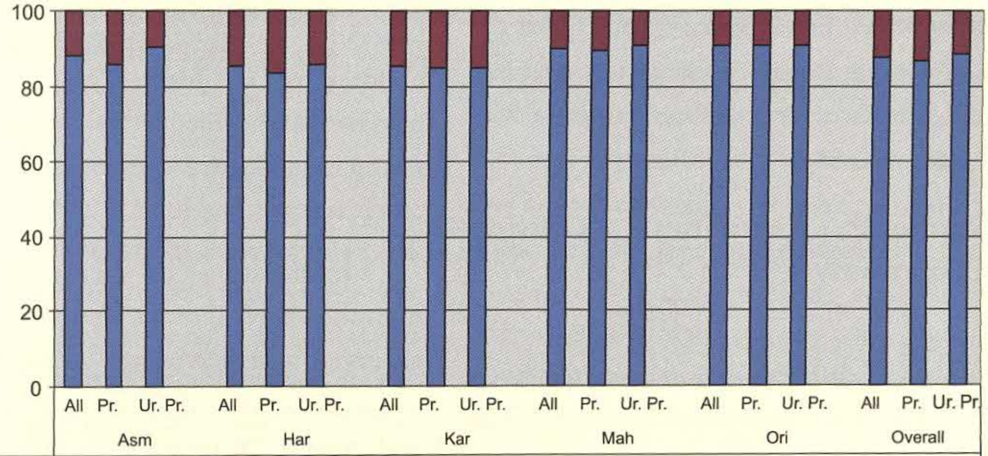
Fig 2.7: Percentage of working days teachers did not teach



	Asm	Har	Kar	Mah	Ori	Overall
■ Adm. work	0.8	0.8	0.2	0.5	0.3	0.5
■ Duty (related to edu)	0.7	0.8	0.6	0.3	0.4	0.6
□ Training	1.8	1.4	3.4	1.8	3.3	2.3
■ Duty (not related to edu)	0.5	1	0.4	0.1	0.5	0.5
■ Leave	2.2	6.1	4.9	3.2	4.3	4.1

According to teachers, on a typical working day, 87.9% of their time is spent on different curricular activities. It varies from 85.1% in Haryana to 90.8% in Orissa. As far as upper primary schools are concerned, the average time spent (88.5%) on curricular activities is marginally more than that in primary schools (87%). Maximum variation between the two categories of schools was observed in the case of Assam, where time spent on non-curricular activities was much more in primary schools than that in upper primary schools.

Fig. 2.8: Percentage of teachers' time on a typical day on curricular & non-curricular activities



	All	Pr.	Ur. Pr.	All	Pr.	Ur. Pr.	All	Pr.	Ur. Pr.	All	Pr.	Ur. Pr.	All	Pr.	Ur. Pr.	All	Pr.	Ur. Pr.
	Asm			Har			Kar			Mah			Ori			Overall		
🟥 Non-curricular	11.8	14.0	9.7	14.8	16.3	14.0	15.0	15.1	15.0	9.8	10.4	9.5	9.1	9.2	9.0	12.1	13.0	11.4
🟦 Curricular	88.2	85.9	90.2	85.2	83.8	85.9	85.1	85.0	85.0	90.1	89.4	90.6	90.8	90.7	91.1	87.9	87.0	88.6

le 2.1 indicates distribution of teachers' on different curricular activities. About of the total time was spent on actual sroom teaching which is followed by 7.4 ime devoted to giving and correcting home work. In Orissa, teachers spent 73% of their time on classroom teaching whereas this percentage was about 58% in Haryana. In the other three states, it was close to 64%.

ble 2.1: Percentage of total time spent by teachers on different curricular activities on a typical day

	Assam			Haryana			Karnataka			Maharashtra			Orissa			Overall		
	All	**P**	**Ur. Pr.**	**All**	**P**	**Ur. Pr.**	**All**	**P**	**Ur. Pr.**	**All**	**P**	**Ur. Pr.**	**All**	**P**	**Ur. Pr.**	**All**	**P**	**Ur. Pr.**
Classroom teaching	64.0	64.9	63.2	57.8	57.2	58.2	64.2	64.5	64.0	63.5	62.7	63.9	73.3	73.1	73.6	64.6	64.5	64.6
Lesson planning	5.0	4.5	5.5	3.4	2.9	3.6	4.2	4.0	4.3	6.4	6.4	6.4	5.7	5.7	5.6	4.9	4.7	5.1
Evaluating answer sheets	7.2	6.1	8.1	6.1	5.9	6.2	4.7	3.8	5.1	7.6	7.9	7.4	5.3	5.3	5.4	6.2	5.8	6.4
Remedial teaching	4.9	4.8	5.1	5.7	5.7	5.7	5.5	5.9	5.3	6.1	5.7	6.4	1.9	1.8	2.0	4.8	4.8	4.9
Giving & correcting home work	7.1	5.6	8.3	12.2	12.1	12.2	6.5	6.8	6.3	6.5	6.7	6.5	4.6	4.8	4.5	7.4	7.2	7.6

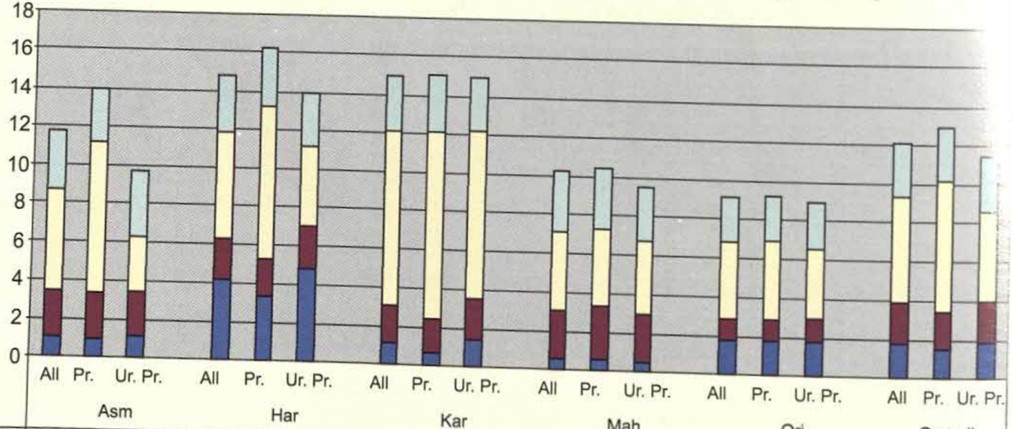
Of the total school time, on average, about 13% of teachers' time at primary level and 11.4% at upper primary level was spent on non-curricular activities as shown in Fig. 2.8. Fig. 2.9 provides distribution of this time on different non-curricular activities. About 6% of the total time as reported by teachers was spent on distribution of mid-day meals. It is maximum (9%) in Karnataka. Time spent on supply of data and other information is about 2% in all the states except Orissa, where it is less (about 1.1%).

2.4 Students' Activities Outside Classroom

Investigators during their two days visit to schools for data collection also observed students' activities outside the classroom while teaching was in progress in school. For this purpose, students' activities were observed during three time slabs (i) within an hour of opening of school (forenoon), (ii) after recess, and (iii) within an hour of closing of school.The activities in which students were engaged were classified as (i) curricular or co-curricular such as doing an outdoor assignment for Science or EVS, playing games, participation in sports or cultural programmes (ii) activities related to school management such as upkeep of school premises, maintenance of discipline and (iii) other activities not related with school such as going out of school, entering into school, loitering, gossiping/ socializing with other children or outsiders. The investigators had to observe and record the number of students found outside the classrooms and what they were doing.

Information in terms of number of schools where above mentioned situation was observed and percentage of students engaged in such activities during forenoon, after recess and during last hour of the school is provided in Tables 2.2, 2.3 and 2.4 respectively. The percentage of students presented in these tables is computed with respect to total enrolment of those schools in which students were found engaged in outside classroom activities.

Fig.2.9: Percentage of teachers' time spent on non-curricular activities on a typical day



	Asm All	Asm Pr.	Asm Ur. Pr.	Har All	Har Pr.	Har Ur. Pr.	Kar All	Kar Pr.	Kar Ur. Pr.	Mah All	Mah Pr.	Mah Ur. Pr.	Ori All	Ori Pr.	Ori Ur. Pr.	Overall All	Overall Pr.	Overall Ur. Pr.
☐ Attendance & other registers	3.1	2.8	3.4	2.9	3.1	2.8	2.9	3.0	2.8	3.1	3.1	2.8	2.3	2.3	2.4	2.8	2.9	2.8
☐ Mid-day meals	5.3	7.9	2.9	5.6	7.9	4.2	9.0	9.7	8.7	4.0	4.0	3.7	3.9	4.1	3.6	5.5	6.7	4.6
■ Data & other information	2.4	2.4	2.3	2.1	2.0	2.2	2.0	1.7	2.1	2.6	2.8	2.6	1.2	1.1	1.2	2.1	2.0	2.1
■ Any Other	1.0	0.9	1.1	4.2	3.3	4.8	1.1	0.7	1.4	0.5	0.5	0.4	1.7	1.7	1.8	1.7	1.4	1.9

2.4.1 Students' Activities Outside Classroom within an Hour of Opening of School

There were very few schools where st nts were found outside classrooms during fo on when teaching was going on. In C there were four such schools, whereas s hools in the other four states varied from 5 sam to 23 in Maharashtra.

n 11.2% primary and 8.0% upper p y schools, some students were out of cl oms during the school hours. In primary sc s, during forenoon, on an average, 11.3% st ts were observed to be engaged in other th urricular and school management related ac ties. The same incidence observed in the ca of upper primary schools was lower than th r primary schools. In the case of Assam and C a, percentage of students engaged in other a ties and also the number of such schools a wer than that for Haryana, Karnataka and M rashtra. Overall, students engaged in such o oor activities constituted 11.2% for primary a .8% for upper primary schools.

2.4.2 Students Activities Outside Classrooms after Recess

In 10.2% primary schools and 8.4% upper primary schools, a few students were found to be outside their classrooms when teaching started after the recess. In other words, all the students were in their classrooms in 89.8% primary schools. There were 97% and 99% such schools in Orissa and Assam respectively, whereas such schools in the remaining three states varied from 81% in Haryana to 89% in Maharashtra. In the case of upper primary schools, no student was found outside classroom in Assam after the recess ended and the same situation was observed in 99% schools of Orissa. Such schools were 87% each in Karnataka and Maharashtra and 85% in Haryana.

In the case of Assam, 7.5% students of only one primary school were engaged in curricular activities after recess whereas no student was observed to be outside classroom in upper primary schools. Orissa schools also had almost the same pattern.

ble 2.2: Percentage of students engaged in different outside classroom activities within an hour of opening of school (forenoon) while teaching was going on in school

ctivities		Assam		Haryana		Karnataka		Maharashtra		Orissa		Overall (%)	
		Pr.	Ur. Pr	Pr.	Ur. Pr	Pr.	Ur. Pr	Pr.	Ur. Pr	Pr.	Ur. Pr	Pr.	Ur. Pr
Curricular	**Schools (No.)**	4	1	3	3	3	1	6	5	0	1	3.2	3.2
	Students (%)	21.5	2.4	1.5	1.8	17.4	1	2	2.1	0	6.3	6.3	2.2
School management	**Schools (No.)**	3	1	9	8	7	8	9	11	0	0	5.6	5.4
	Students (%)	23.1	0.5	2.7	2.4	6.9	3.7	2.2	1.9	0	0	4.6	2.6
Other	**Schools (No.)**	3	0	10	10	10	6	13	10	3	1	7.8	5.4
	Students (%)	8.8	0	10.6	4.8	25.3	10.1	7.8	3.1	6.1	0.5	11.3	5.5
Total	**Schools (No.)**	5	2	18	15	16	10	14	12	3	1	11.2	8.0
	Students (%)	30.7	1.1	6.6	4.6	23.0	8.4	9.4	5.5	6.1	6.8	11.2	5.8

Table 2.3: No. of schools and percentage of students engaged in different outside classroom activities after recess while teaching was going on in classes

Activities		Assam		Haryana		Karnataka		Maharashtra		Orissa		Mean	
		Pr.	Ur. Pr	Pr.	Ur. Pr	Pr.	Ur. Pr	Pr.	Ur. Pr	Pr.	Ur. Pr	Pr.	Ur. Pr
Curricular	Schools (No.)	1	0	1	1	4	2	6	6	0	1	2.	2
	Students (%)	7.5	0	1	2.3	17.3	4.2	1.3	1.9	0	7.9	5.	3.0
School Management	Schools (No.)	0	0	8	4	6	6	7	10	0	0	4.	4
	Students (%)	0	0	1.6	3.4	8.8	3	2.1	1.5	0	0	2.	2.4
Other	Schools (No.)	0	0	15	15	11	9	8	9	3	1	7.4	6.8
	Students (%)	0	0	5.7	5.9	20.6	6.9	11.5	2.8	8.6	1	9.5	5.6
Total	Schools (No.)	1	0	19	15	17	13	11	13	3	1	10.2	8.4
	Students (%)	7.5	0.0	5.4	6.7	21.0	7.3	9.6	4.2	8.6	8.9	9.7	6.4

2.4.3 Students' Activities Outside Classroom Within an Hour of School Closing

From Table 2.4 it is observed that substantial number of schools in Haryana (24), Karnataka (22) and Maharashtra (1[illegible] were observed to having students engaged i[illegible]ther' activities. No. of schools as well as pe[illegible]tage of students involved in the 3 activiti[illegible] were generally more in primary schools tha[illegible]hose in upper primary schools.

Table 2.4: No. of schools and percentage of students engaged in different outside classroom activities within an hour of closing of school

Activities		Assam		Haryana		Karnataka		Maharashtra		Orissa		M[illegible]n	
		Pr.	Ur. Pr	Pr.	Ur. Pr	Pr.	Ur. Pr	Pr.	Ur. Pr	Pr.	Ur. Pr	Pr.	Ur. Pr
Curricular	Schools (No.)	4	5	2	1	2	4	6	8	0	1	2.8	3.8
	Students (%)	11.4	13.1	45.7	1.3	27.9	4.3	11.8	2.2	0	0.5	17.7	5.0
School Management	Schools (No.)	4	4	12	7	3	7	3	6	0	0	4.4	4.8
	Students (%)	11.2	17	3.3	2.3	14.6	3.2	1	1.7	0	0	4.5	3.3
Other	Schools (No.)	3	3	12	12	11	11	7	7	5	1	7.6	6.8
	Students (%)	15.9	36.3	4.5	5.2	22	8.1	3.2	2.8	13.9	0.5	9.6	6.9
Total	Schools (No.)	6	6	19	15	11	15	10	11	5	1	10.2	9.6
	Students (%)	22.3	29.5	8.3	4.7	27.4	8.7	8.4	4.7	13.9	1.0	13.3	7.9

As far as engagement of students in curricular activities outside classroom during an hour before closing of schools is concerned, such instances were observed to be more in upper primary schools than in primary schools. Further, incidence of engagement of children in other activities during this period was observed in the same number of primary and upper primary schools in all the states except Orissa. In the case of Orissa, students observed to be engaged in other activities belonged to 5 primary schools and [illegible] upper primary school.

2.5 Summary

(i) The National Curriculum Framework-2005 (NCF-2005) has prescribed 200 working days for schools. The states also prescribe the same which varied from 230 for Orissa to 258 for Assam. The number of days schools actually worked varied from 228 in Orissa to 249 in Assam. On an average, about one-fourth (0.9) of the total days (4.0) schools in the 5 states did not function on the working days due to reasons other than special drives (e.g. Polio), elections, natural disaster and local events/festivals.

Further, on an average, schools' working hours were 6.1 hours which is slightly more than that (6.0 hours) prescribed by the NCF-2005. Time spent on morning assembly by schools varied across states from 12.6 minutes in Karnataka to 23.8 minutes in Maharashtra. In 50% primary schools and 39.1% upper primary schools, there is only prayer during morning assembly. Prayer and news also form a part of morning assembly in 25.9% primary schools and 38.6% upper primary schools. Mid-day meals served during recess took, on an average, 36.5 minutes, which varied from 26.1 minutes in Assam to 43.6 minutes in Karnataka.

(ii) Overall, teachers were engaged in activities outside school on 8% of the total working days. It included 4.1% days of leave, 2.3% days of training and about half a percent each on duty related to education and duty not related to education.

(iii) Of the total time in schools on a typical day, teachers devoted 88.6% of their time on curricular activities. It included 64.6% time on classroom teaching and 23.3% on other curricular activities. About 12.1% of their total time spent on non-curricular activities including mid-day meals, etc.

(iv) Mostly students were in classrooms soon after the classes started but in a few cases, some students were found outside the class during the 1st hour after the school opened. There were 7% schools (primary and upper primary) in Assam, 33% in Haryana, 26% in Karnataka, 26% in Maharashtra and 4% in Orissa, where students were found engaged in activities outside classroom during an hour after opening of school. Percentage of such schools did not indicate discernible variation during post recess period and within an hour of closing of school in the case of Haryana, Karnataka and Maharashtra. In the case of Assam, such incidence was observed only in 1% schools during post recess duration and in 12% schools during one hour before closing of school whereas in the case of Orissa, percentage of such schools increased from 4% in post-recess session to 6% during one hour before closing of school. More students were seen to be engaged in activities other than curricular or co-curricular activities during one hour before closing of school.

Chapter 3

CONDITION OF CLASSROOMS AND TEACHING ENVIRONMENT

3.1 Sample for Classroom Observation

The focus of the study was to estimate time spent by teachers and students on different activities while teaching was going on in grades II, IV and VI. Besides, facilities in the classroom, general environment in the class and teacher behaviour are known to affect learning. With this in view, investigators were required to report on these aspects for each class after they completed observation of teachers' and students' activities in 10 Snapshots. For reco g their observation on physical facilities an eaching environment in the classroom, used Investigator's Classroom Observatio hedule (TS- 3(b)).

As already mentioned above, th nple of classes observed for this purpose is t same as the one used for Snapshots. Thus, the ussions in this chapter are for the sample classes presented in Table 3.1.

Table 3.1: Sample of Observed Classes

Grade	Subject	Assam	Haryana	Karnataka	Maharashtra	Orissa	erage
II	Lang	66	100	100	100	100	3.2
	Math	66	100	100	100	100	3.2
IV	Lang	66	99	99	100	100	2.8
	Math	66	99	99	100	100	2.8
	EVS	66	99	99	100	100	2.8
VI	Lang	40	42	40	40	40	0.4
	Math	40	42	40	40	40	0.4
	SS	40	42	40	40	40	0.4
	Science	40	42	40	40	40	0.4

3.2 Multi-grade Teaching

Multi-grade teaching was observed only in classes of grades II and IV even though there were a few multi-grade classes in grade VI too. According to Table 3.2, percentage of multi-grade classes in grade II of our sample varied from 27.3% in Assam to 62% in Karnataka. Percentage of students in multi-grade classes (Table 3.3) was highest (46.3) in Karnataka and lowest (19.4) in Assam. The position in respect of grade IV was not very much different than that of grade II. Incidence of multi-grade classes was slightly lower in grade IV than in grade II

3.2.1 Participation in Multi-Grade Classes

Table 3.2 also shows the percentage of classes in which students of grades II and IV are taught together with students of other grades. For Assam, 15.2% and 12.1% multi- grade classes respectively had one and three grades in addition to grade II. Although Orissa had the same pattern as that of Assam but majority of multi-grade classes had one grade in addition to grade II. Multi-grade situation for grade IV remains same for both the states. In Haryana multi-grade classes comprised one or two classes in addition to target grade. Unlike these three states, Karnataka and Maharashtra had more than two combinations of grades in multi-grade classes. Still majority of multi-grade classes had one grade in addition to target grade.

Table 3.2: Percentage of students in multi-grade classes and percentages of grades with which classes of grades II & IV were combined.

State	Target	Total classes	% Multi-grade classes	No. of 'grades combined with the Target grade			
				One	Two	Three	Four
Assam	II	132	27.3	15.2	0.0	12.1	0.0
	IV	198	24.2	12.1	0.0	12.1	0.0
Haryana	II	200	39.0	30.0	9.0	0.0	0.0
	IV	297	29.3	28.3	1.0	0.0	0.0
Karnataka	II	200	62.0	49.0	7.0	3.0	3.0
	IV	297	54.6	45.5	5.1	1.0	3.0
Maharashtra	II	200	35.0	31.0	1.0	3.0	0.0
	IV	300	30.0	26.0	1.0	3.0	0.0
Orissa	II	200	39.0	36.0	0.0	3.0	0.0
	IV	300	37.3	34.3	0.0	3.0	0.0

According to Table 3.3, the percentage of students of grade II being taught in multi-grade classes was almost equal to that in grade IV in Assam, Haryana and Orissa. Their respective values are 18%, 28% and 28%. In Karnataka and Maharashtra there were more students in multi-grade classes in grade II than in grade IV.

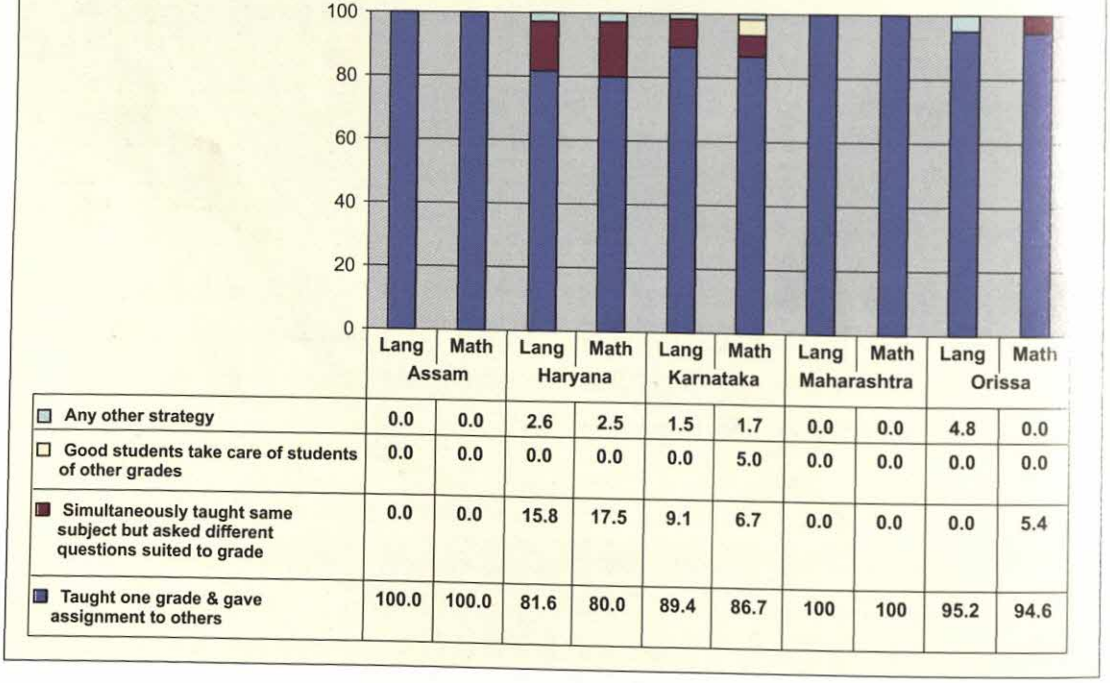
Table 3.3: Percentage of students in multi grade classes

Grade		Assam	Haryana	Karnataka	Maharashtra	Orissa	Average
II	Total students present in observed classes	2221	5271	2899	5135	3229	3751
	% of students in multi-grade classes	19.4	28.7	46.3	31.1	27.3	30.6
IV	Total students present in observed classes	3531	8079	4746	7898	5193	5889.4
	% of students in multi-grade classes	18.1	28.4	37.3	26.1	28.5	27.7

3.2.2 Teaching Strategy in Grade II Classes

Fig. 3.1 provides information about teaching strategy adopted by teachers in multi-grade classes of grade II. One strategy was that teachers taught students of one grade and gave assignment to students of other grade(s) sitting in the same class. All teachers adopted this strategy while teaching language and mathematics in Assam and Maharashtra. In the remaining three states most of the teachers but not all, followed this strategy. The other teaching strategy adopted by the teachers was that of teaching the same subject simultaneously to all the grades in their class but asking the students questions of different difficulty levels. This was seen in 15.8% language and 17.5% in mathematics classes of Haryana. The same strategy was adopted in 9.1% language classes and 6.7% mathematics classes in Karnataka. In Orissa, 5.4% mathematics classes also adopt this teaching strategy. Except in 5% mathematics classes in Karnataka state, no teacher adopted the third strategy of using good students to take care other grade(s). In very few mathematics classes, teachers adopted a teaching strategy that was different from the above-mentioned categories 2.5% in Haryana and 1.7% in Karnataka. In language classes also, teachers of Haryana (2.6%), Karnataka (1.5%) and Orissa (4.8%) adopted other than the three aforesaid teaching strategy.

Fig. 3.1: Teaching strategy adopted by teachers in other grade(s) when teaching grade II

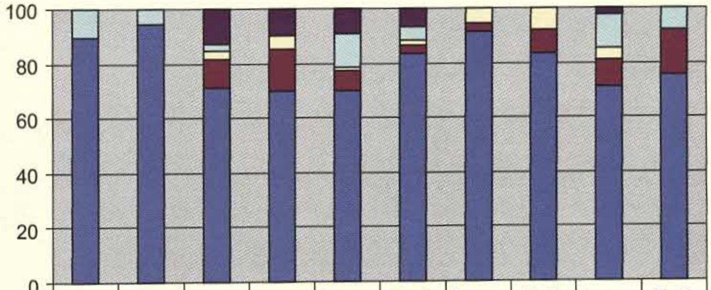


	Assam		Haryana		Karnataka		Maharashtra		Orissa	
	Lang	Math	Lang	Math	Lang	Math	Lang	Math	Lang	Math
☐ Any other strategy	0.0	0.0	2.6	2.5	1.5	1.7	0.0	0.0	4.8	0.0
☐ Good students take care of students of other grades	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0
■ Simultaneously taught same subject but asked different questions suited to grade	0.0	0.0	15.8	17.5	9.1	6.7	0.0	0.0	0.0	5.4
■ Taught one grade & gave assignment to others	100.0	100.0	81.6	80.0	89.4	86.7	100	100	95.2	94.6

3.2.2.1 Activities of Students of Other Grades When Grade II was Taught

When activities of teachers and students in language and mathematics classes of grade II in multi-grade situation were observed, the investigators were also required to observe the activities of other grade students during that period. This information is presented in Fig.3.2. In more than 70% multi-grade classes of language and mathematics, students of other grades were doing some assigned work. Except in Assam, where in a few cases, students of other grades were asked to learn on their own. In about 10% language classes, in Haryana and Orissa, this was the case; in other states, the percentage of such classes was less than 8%. In the case of mathematics multi-grade classes, the percentage of such classes varied from 3.3% in Karnataka to 16.2% in Orissa. Another activity reported for students of other grade were 'students being asked to sit quietly doing nothing or being allowed to play games'. The percentage of such classes in language varied between 10% and 12% in Assam, Karnataka and Orissa and in mathematics between 5% and 8% in these two states. In the other two states, this percentage was less than 3%.

Fig. 3.2: Activities of students of other grades in multi-grade class when grade II students were taught by teachers



	Lang	Math	Lang	Math	Lang	Math	Lang	Math	Lang	Math
	Assam		Haryana		Karnataka		Maharashtra		Orissa	
■ Did some other activity	0.0	0.0	13.2	10.0	9.1	6.7	0.0	0.0	2.4	0.0
□ Sat quietly doing nothing or played games	10.5	5.9	2.6	0.0	12.1	5.0	0.0	0.0	11.9	8.1
□ Did some other work and not any assigned task	0.0	0.0	2.6	5.0	1.5	1.7	5.7	8.3	4.8	0.0
■ Learn on their own	0.0	0.0	10.5	15.0	7.6	3.3	2.9	8.3	9.5	16.2
■ Did some assigned work	89.5	94.1	71.1	70.0	69.7	83.3	91.4	83.3	71.4	75.7

3.2.3 Teaching strategy in Grade IV Classes

Teaching strategy adopted by teachers in multi-grade classes of language, mathematics and Environment Studies (EVS) of grade IV is presented in Table 3.4. In more than 80% classes of each subject, teachers taught one grade and gave assignment to students of other grades. Another teaching strategy adopted by a few teachers was teaching the same subject simultaneously to students of all the grades and asking them questions of different difficulty levels. This happened in a few cases in Haryana, Karnataka, Maharashtra and Orissa. Teachers did not adopt this strategy for any subject in Assam and in language in Maharashtra. In very few cases, any other strategy was adopted. Only in Karnataka, there were a few classes in which teachers had asked good students to take care of the students of lower grade sitting in the same class.

3.4: Teaching strategy adopted by teachers for dealing with the other grade when grade IV was being taught by them

Teaching Strategy	Assam			Haryana			Karnataka			Maharashtra			Orissa		
	Lang	Math	EVS	Lang	Math	EVS	Lang	Math	EVS	Lang	Math	EVS	Lang	Math	EVS
Taught one grade & gave assignment to others	100.0	100.0	100.0	92.1	96.7	90.6	86.4	84.6	79.6	96.7	96.7	93.3	89.2	[illegible]	92.5
Taught same subject but asked different questions suited to grade	0.0	0.0	0.0	7.9	3.3	3.1	8.5	7.7	11.1	0.0	3.3	6.7	2.7	[illegible]	5.0
Good students took care of other students	0.0	0.0	0.0	0.0	0.0	0.0	3.4	5.8	5.6	0.0	0.0	0.0	2.7	[illegible]	0.0
Any other strategy	0.0	0.0	0.0	0.0	0.0	6.3	1.7	1.9	3.7	3.3	0.0	0.0	5.4	[illegible]	2.5

3.2.3.1 Activities of Students of Other Grade(s) When Grade IV was being Taught

Table.3.5 presents activities of students of other grade when grade IV was being taught by teachers. Except in Haryana and Karnataka, students of other grades were engaged in doing some assigned work in 86% or more classes. In case of Haryana and Karnataka, students of other classes engaged in doing some assigned work varied from 58% to 85%. In a small percentage of classes, students were doing nothing or played games. In Maharashtra, however, the percentage of such classes was nil.

Table 3.5: Students' activities of other grades in a multi-grade class when students of grade IV were being taught

Students activities	Assam			Haryana			Karnataka			Maharashtra			Orissa		
	Lang	Math	EVS	Lang	Math	EVS	Lang	Math	EVS	Lang	Math	EVS	Lang	Math	EVS
Assigned work	94.1	87.5	93.8	57.9	70.0	65.6	79.7	84.6	75.9	86.7	86.7	86.7	86.5	86.5	87.5
Learn on their own	0.0	0.0	0.0	15.8	16.7	15.6	1.7	5.8	3.7	3.3	3.3	3.3	8.1	5.4	5.0
Other work not assigned to them	0.0	6.3	0.0	5.3	3.3	0.0	3.4	0.0	3.7	10.0	10.0	10.0	0.0	0.0	5.0
Sat quietly doing nothing or played games	5.9	6.3	6.3	2.6	3.3	3.1	8.5	3.8	13.0	0.0	0.0	0.0	5.4	8.1	2.5
Some other activity	0.0	0.0	0.0	18.4	6.7	15.6	6.8	5.8	3.7	0.0	0.0	0.0	0.0	0.0	0.0

3.3 Physical Environment at the Place of Learning

Classroom has to be a congenial place where most of the time students interact formally and informally with the teachers and pee[illegible]up in the process of learning. Due to sh[illegible] of space, next option for the same pu[illegible]s verandah. Classes are sometimes held in [illegible]pace due to non-availability of suitable cla[illegible]ns/verandahs or more favourable we[illegible] condition outside. Besides these, other aspects which affect classroom environment are overall seating arrangement, extent to which students come in prescribed uniform and display of charts, maps, etc. in the classrooms.

3.3.1 Space Where Classes were Held

Table 3.6 shows that 98% or more grade II classes were held in the classrooms in all the states, except in Haryana where this percentage was 86.5%. The percentage of such classes in grades IV and VI was cent percent in Karnataka while over 93% in other states.

Table 3.6: Percentage of classes according to type of space used for teaching

[illegible]te	Grade II			Grade IV			Grade VI		
	Class-rooms	Verandah	Open Space	Class-rooms	Verandah	Open Space	Class-rooms	Verandah	Open Space
A[illegible]	98.5	1.5	0	98.5	1.5	0	100	0	0
H[illegible]na	86.5	13.5	0	93.3	6.7	0	96.4	3.6	0
K[illegible]aka	99	1	0	100	0	0	100	0	0
M[illegible]ashtra	98	2	0	99.3	0.3	0.3	97.5	2.5	0
C[illegible]	97.5	2.5	0	94.3	5.3	0.3	98.8	1.2	0

3.[illegible] Adequacy of Sitting Space and Natural Light in Classrooms

Adequate sitting space and light in the classrooms are necessary for smooth conduct of classroom activities. Table 3.7 provides information on this aspect. Classrooms in Haryana and Maharashtra were better placed in respect of adequacy of sitting space where (more than 90% classes) had adequate sitting space and natural light in classrooms. But in Assam and Orissa, less than 90% classrooms had adequate sitting space for children.

Table 3.7: Percentage of classes according to adequacy of sitting space and light in the classroom

State	Grade II		Grade IV		Grade VI	
	Adequate Sitting Space	Adequate Light	Adequate Sitting Space	Adequate Light	Adequate Sitting Space	Adequate Light
Assam	84.1	84.8	86.9	90.9	85	94.4
Haryana	92.9	90.2	95.7	88.1	95	86.2
Karnataka	90.4	96.9	88.9	93	87.5	93.8
Maharashtra	97	97.5	94.3	97.7	98.1	96.2
Orissa	83	88.5	86.6	86.6	73.7	92.5

21.6.2011
14550
Library

As far as adequacy of light is concerned, there was no discernible variation across grades and across states.

The problem of inadequate sitting space and insufficient light in classrooms exists in less than 10% classrooms in the states covered in this study except in Assam and Orissa where the problem of inadequate sitting space is in about 15% classrooms.

3.3.3 Seating Arrangement in Classrooms

Table 3.8 provides information on the type of seating arrangement in the classes. In 90% or more classes students' sat in rows and columns in all the three grades of Assam, Haryana, and Maharashtra. In the case of Karnataka and Orissa this type of seating arrangement was observed in 85% and 31% classes re ectively of grade II. About 14% classes in Karn aka and 66% in Orissa students sat in group or semi circle. In all the states, except Orissa ade IV and grade VI, students mostly sat i ows or columns. In Orissa, the students sat groups in over 60% classes of grades II an V and in 43% classes of grade VI. Haphaza seating of students was seen in hardly 1 to ercent classes in any state.

Table 3.8: Percentage of classes according to seating arrangement in classroom

Seating arrangement	Grade II					Grade IV					Grade VI				
	Asm	Har	Kar	Mah	Ori	Asm	Har	Kar	Mah	Ori	Asm	Har	Kar	M	Ori
Rows / Column	94.7	94.5	85.0	94.0	31.0	94.0	96.6	90.6	96.4	37.3	100.0	95.8	92.5	9	56.2
Group/Semi circle	3.8	4.5	13.5	5.0	66.0	4.1	1.0	8.1	3.3	61.0	0.0	0.6	6.2	[illegible]	43.2
Haphazard manner	1.5	1.0	1.5	1.0	3.0	2.0	2.3	1.3	0.3	1.7	0.0	3.6	1.3	[illegible]	0.6

3.3.4 Seating Arrangement for Girls

Table 3.9 presents data on whether boys and girls sat separately or not in mixed classes. In grade II, there were more classes where girls did not sit s ately. The phenomenon of boys and gir itting separately became more common i rades IV and VI in every state while it v least common in grade II.

Table 3.9: Percentage of classes according to whether boys and girls sat separately in clas

Grade	Activities	Assam	Haryana	Karnataka	Maharashtra	Orissa
II	Girls sitting separately	45.5	31.5	21.0	39	17.5
	Girls not sitting separately	45.4	46.5	73.0	53	78.5
	Classes having no girls	9.1	22	6.0	8	4
IV	Girls sitting separately	53.6	49.2	35.4	48	24.3
	Girls not sitting separately	39.4	27.6	58.9	42	74
	Classes having no girls	7.1	23.2	5.8	10	1.6
VI	Girls sitting separately	88.2	75	58.7	66.3	58.8
	Girls not sitting separately	7.5	3.6	34.4	25	38.7
	Classes having no girls	4.4	21.4	6.9	8.8	2.5

3.3.5 Coming to School in Uniform

The percentage of grade II classes in which most of the students came to school in uniform (refer Table 3.10), varied from 35.6% in Assam to 74.5% in Karnataka. The position for grades IV and VI classes is much better in respect of percentage of classes where most of the students attended school in uniform. Only in Assam and Haryana, the percentage of such classes was rather low.

Table 3.10: Percentage of classes where most of the students came in uniform

State	Grade		
	II	IV	VI
Assam	35.6	42.4	62.5
Haryana	48.5	48.8	73.2
Karnataka	74.5	80.1	86.3
Maharashtra	69.5	79	92.5
Orissa	52.5	55	77.5

3.3.6 Availability of Blackboard and Their Quality

As shown in Table 3.11, over 85% classrooms in all the states except Assam had Wall blackboard. In Assam, the tripod or hanging blackboards were quite common; wall blackboards were found in less than 50% classrooms. Non-availability of blackboards in rare. Consequently, more than one-fourth classes in Assam were equipped with either tripod or hanging blackboards. In Haryana, a little more than 10% classes were provided with tripod blackboard.

3.11: Percentage of classes by type of blackboard in the class

State	Grade II				Grade IV				Grade VI			
	Wall	Tripod	Hanging	NA	Wall	Tripod	Hanging	NA	Wall	Tripod	Hanging	NA
Assam	43.2	26.6	30.3	0.0	50.0	25.3	24.8	0.0	45.6	25.6	28.8	0.0
Haryana	84.5	13.5	1.0	1.0	86.2	12.8	0.4	0.7	87.5	10.1	0.0	2.3
Karnataka	99.0	0.0	1.0	0.0	99.4	0.6	0.0	0.0	98.7	0.0	1.3	0.0
Maharashtra	96.5	1.0	2.5	0.0	89.6	4.0	6.3	0.0	94.4	0.0	5.6	0.0
Orissa	98.0	1.0	1.0	0.0	95.0	1.7	3.0	0.3	98.7	1.3	0.0	0.0

NA = Blackboard not available

About 90% or more classrooms were observed to be having satisfactory quality blackboard in Karnataka, Maharashtra and Orissa. The position in Assam and Haryana was not that good. In the case of Assam percentage of classes having satisfactory quality of blackboard were 75.0, 67.7 and 79.4 respectively in grades II, IV and VI. The classes in Haryana were better placed than Assam for having blackboards of satisfactory quality in Grade II (93%), grade IV (90.6%) and grade VI (86.9%).

Table 3.12: Percentage of classes by quality of blackboard and chalk

State	Grade II		Grade IV		Grade V	
	Satisfactory	Poor	Satisfactory	Poor	Satisfactory	Poor
Assam	75.0	25.0	67.7	32.3	79.4	20.6
Haryana	93.0	6.0	90.6	8.8	86.9	10.7
Karnataka	96.0	4.0	93.6	6.4	91.3	8.7
Maharashtra	97.5	2.5	96.7	3.3	95.0	5.0
Orissa	93.5	6.5	92.3	7.7	89.4	10.6

3.3.7 Display of Charts in Classrooms

At least a few charts were found to be displayed in almost all the classes of schools in Maharashtra. Majority of classes had several charts. None of the classes in Karnataka and Orissa had displayed several charts. The position was rather bad in Haryana ere over 80% classrooms of each grade had no ch displayed in classrooms. In Orissa, Haryana and K taka, the percentage of classrooms without any ch vas quite large in every grade.

Table 3.13: Percentage of classes by display of charts

	Grade II			Grade IV			Grade VI		
	Several	Few	None	Several	Few	None	Several	Few	None
Asm	23.5	61.3	15.2	20.2	66.1	13.7	12.5	67.5	20.0
Har	1.0	17.5	81.5	0.7	18.5	80.8	2.3	17.3	80.4
Kar	0.0	42.0	58.0	0.0	36.0	64.0	0.0	40.6	59.4
Mah	72.5	27.0	0.5	59.3	36.7	4.0	71.9	24.4	3.7
Ori	0.0	22.0	78.0	0.0	22.3	77.7	0.0	16.9	83.1

3.4 Occurrence of Disturbance in Classes and Punishment to Students

3.4.1 Incidence of disturbance in class

Incidents of disturbance in classrooms were noted by the investigators as it helped in assessing how far the classes were held a quiet undisturbed environment.

Karnataka and Maharashtra are e states (refer Table 3.14) where incidence of d rbance was the highest in grades II, IV and VI. wever, in most cases teachers were able to c rol the

Table 3.14: Percentage of classes according to teachers' control and punishment to stude

State	Grade II				Grade IV				Grade VI			
	No Incidence of disturbance occurred	Classes controlled easily	Classes controlled With some difficulty	Classes could not be Controlled	No Incidence of disturbance occurred	Classes controlled easily	Classes controlled With some difficulty	Classes could not be Controlled	No Incidence of disturbance occurred	Classes controlled easily	Classes controlled With some difficulty	Classes could not be Controlled
Asm	44.7	45.5	6.1	3.8	50.0	40.4	8.1	1.5	59.4	36.9	3.1	0.6
Har	56.5	37.5	5.0	1.0	62.0	33.7	4.0	0.3	53.6	44.0	1.8	0.6
Kar	27.5	65.0	5.0	2.5	24.9	63.3	7.4	4.4	31.9	60:6	5.0	2.5
Mah	34.5	57.0	6.0	2.5	39.3	55.7	3.7	1.3	31.7	65.0	3.3	0.0
Ori	87.0	9.0	1.5	2.5	81.3	13.0	5.7	0.0	86.3	10.6	3.1	0.0

class easily. Orissa had the least incidence of disturbance in classes; only 13% to 18% classes had some disturbance.

3.4.2 Punishment given to students

As shown in Table 3.15, there were more than 88% classes in which no student of any of the 3 grades was punished. Only in Maharashtra and Haryana, the percentage of classes, where grade II students were physically punished, was more than 8%. In all other states the percentage of such classes was less than 5% in every grade. Incidence of punishment declined considerably in class VI.

Table 3.15: Percentage of classes according to punishment to students

C	II					IV					VI				
Punishment	**Asm**	**Har**	**Kar**	**Mah**	**Ori**	**Asm**	**Har**	**Kar**	**Mah**	**Ori**	**Asm**	**Har**	**Kar**	**Mah**	**Ori**
Not punished	96.2	91.5	98.5	88.0	95.5	97.5	93.6	99.3	94.3	97.7	96.9	97.0	97.5	98.3	98.1
Punished	3.8	8.5	1.5	12.0	4.5	2.5	6.4	0.7	5.7	2.3	3.1	3.0	2.5	1.7	1.9
Scolded	0.8	1.0	0.5	10.5	1.5	0.5	2.4	0.3	5.3	1.3	1.9	0.6	0.6	1.7	0.6
Physically punished	0.8	7.0	0.5	1.5	2.0	0.5	3.0	0.0	0.3	1.0	0.0	1.2	0.0	0.0	1.3
Sent out of class	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Any other	2.3	0.5	0.5	0.0	1.0	1.5	1.0	0.3	0.0	0.0	1.3	0.6	1.9	0.0	0.0

3.4.3 Time Lost due to Disturbance

percentage of classes of grade II which were disturbed while teaching was in progress was minimum (5.5%) in Orissa and maximum (15.2% in Assam. The average duration was 1.9 minutes to 3.0 minutes in grade II for which classes were disturbed. Grade IV and grade VI classes were disturbed relatively less often compared to grade II class but the average duration of disturbance is about 3 minutes in these classes.

Table 3.16: Percentage of classes and average time (in minutes) for which classes were disturbed

Grade	Item of information	Assam	Haryana	Karnataka	Maharashtra	Orissa	Average
II	Classes where teaching was disturbed	15.2	13.0	13.0	13.5	5.5	12.0
	Average time of disturbance	2.0	3.0	3.0	2.0	1.9	2.4
IV	Classes where teaching was disturbed	10.6	12.1	1.3	13.7	6.7	8.9
	Average time of disturbance	3.9	2.1	1.5	2.0	4.2	2.7
VI	Classes where teaching was disturbed	10.0	13.1	1.3	13.1	3.1	8.1
	Average time of disturbance	2.4	2.0	5.5	2.0	2.0	2.8

Apart from other reasons of disturbance, the class gets disturbed when a visitor comes. Table 3.17 shows incidence of visits and the average time for which the classes were disturbed. State of Assam recorded maximum incidence (about 20% classes) in grades II, IV and VI and there the time spent by the teacher with the visitor lasted for 2 to 3 minutes. Fifteen percent classes of grade II in Haryana and Karnataka were disturbed for 6.7 minutes on an average. The grade VI had almost the same frequency of visitors and average time spent by them was also the s me. The teacher time lost due to visitors w on the average less in grades IV and VI co ared to grade II.

Table 3.17: Percentage of classes which had visitors and average time spent by them

Grade	Item of information	Assam	Haryana	Karnataka	Maharashtra	Orissa	verage
II	Classes had visitor	20.5	15.0	15.0	5.5	9.5	13.1
	Average time spent by teacher	2.8	6.7	6.7	1.6	4.0	4.4
IV	Classes had visitor	21.2	11.8	6.4	5.7	12.7	11.6
	Average time spent by teacher	2.4	2.1	2.2	2.2	4.4	2.7
VI	Classes had visitor	20.0	5.4	8.8	5.0	7.5	9.3
	Average time spent by teacher	2.6	1.8	4.6	1.4	2.6	2.6

3.5 Students Behaviour During the Period of Observation

It is observed from Table 3.18 that grade II students of about 49% classes were generally fully disciplined and in almost same proportion of classes they were reasonably disciplined in the states of Karnataka and Orissa. In the case of Haryana and Maharashtra, the percentage of classes, where students were fully d plined, was higher (56.5% and 61.0% of the to classes respectively). The position was otherw in case of Assam where only 31.1% classes w e fully disciplined. The percentage of classes were not disciplined was very small; it was tween 1% and 3.5% in grade II, less than 1% grade IV and nil in grade VI.

Table 3.18: Percentage of classes according to discipline in the class

State	Grade II			Grade IV			Grade VI		
	Disci-plined	Reason-ably Disci-plined	Not Dis-ciplined	Disci-plined	Reason-ably Disci-plined	Not Dis-ciplined	Disci-plined	Reason-ably Dis-ciplined	Not Dis-ciplined
Assam	**31.1**	**67.4**	**1.5**	**30.8**	**68.7**	**0.5**	**39.4**	**60.6**	**0**
Haryana	56.5	42	1.5	59.6	39.7	0.7	75	25	0
Karnataka	49.5	49	1.5	54.2	44.8	1	62.5	37.5	0
Maharashtra	61	35.5	3.5	68.7	30.3	1	86.3	13.8	0
Orissa	48	51	1	60.7	38.7	0.7	70.6	29.4	0

Table 3.19 shows that over 80% classes of each grade in each state were found to be quiet (not noisy) except in Orissa where 27% of grade II classes were noisy. Among the 5 states, Orissa had highest percentage of noisy classrooms and Maharashtra had the least. In general, there were more 'noisy classes in grade II than in other grades in every state.

Table 3.19: Percentage of classes that were quiet/noisy

State	Grade II		Grade IV		Grade VI	
	Quiet	Noisy	Quiet	Noisy	Quiet	Noisy
Asm	82.6	17.4	88.4	11.6	97.5	2.5
Har	87.0	13.0	96.0	4.0	97.5	2.5
Kar	85.0	15.0	92.3	7.7	89.4	10.6
Mah	92.5	7.5	97.0	3.0	98.8	1.3
Ori	73.0	27.0	81.7	18.3	86.9	13.1

The investigators also tried to assess whether students were free with the teacher in the class or not. As per Table 3.20, students were free with teachers in more than 90% classes in the states of Karnataka and Maharashtra, whereas in other states, percentage of such classes was less but not less than 82.5%. On the other hand, there were classes where students were fearful of teachers. The classes in which students were fearful of teachers were maximum in Orissa (15% to 17.5%).

Table 3.20: Percentage of classes in which students were free with teacher

State	Grade II		Grade IV		Grade VI	
	Free with Teacher	Fearful suppressed	Free with Teacher	Fearful suppressed	Free with Teacher	Fearful suppressed
Asm	89.4	10.6	93.4	6.6	86.3	13.8
Har	93.0	7.0	91.9	8.1	89.3	10.7
Kar	100.0	0.0	96.6	3.4	91.9	8.1
Mah	91.0	9.0	91.3	8.7	94.4	5.6
Ori	85.0	15.0	83.3	16.7	82.5	17.5

Coming to decorum and discipline in classrooms, it was found that in over 70% classes students spoke only after raising their hands. Such discipline was more common in classes of grades IV and VI than grade II in every state. The state in which children were more accustomed to asking questions or speaking out of turn was Assam. Such situation was more common in grade II and less common in grades IV and VI.

Table 3.21: Percentage of classes according to whether students spoke out of turn

State	Grade II		Grade IV		Grade VI	
	Raising Hand	Out of turn	Raising Hand	Out of turn	Raising Hand	Out of turn
Assam	70.5	29.5	74.2	25.8	75.6	24.4
Haryana	79.5	20.5	87.2	12.8	91.1	8.9
Karnataka	79.0	21.0	82.2	17.8	90.6	9.4
Maharashtra	83.0	17.0	85.0	15.0	96.9	3.1
Orissa	80.5	19.5	84.3	15.7	83.8	6.3

Table 3.22 shows the percentage of classes in which both girls and boys interact with teachers to the same extent in the mixed classes. In over 90% of the classes in Haryana and Karnataka, both boys and girls interacted equally with the teacher. Percentage of such classes in Assam varied from 79.2% in grade II to 91.9% in grade VI and in Orissa from 83.1% in grade IV to 87.8% in grade VI. In general, boys and girls interacted equally with teacher in more cases in grade VI than in grade II. The older they became, the less was their gender related inhibition but the difference across grades was not much.

Table 3.22 : Percentage of classes according to girls and boys interacting with teacher to the same extent

Total	Grade II			Grade IV			Grade VI		
	Total classes	No. of mixed classes	% of classes*	Total classes	No. of mixed classes	% of classes*	Total classes	No. of mixed classes	% of classes*
Assam	66	60	79.2	66	60	88.9	40	37	91.9
Haryana	100	79	92.4	99	72	91.7	42	33	95.5
Karnataka	100	94	92.0	99	92	92.8	40	36	94.4
Maharashtra	100	89	89.9	100	87	93.1	40	36	94.4
Orissa	100	92	85.3	100	93	83.1	40	39	87.8

* in which boys and girls interacted equally with teacher.

3.6 Teachers' Behaviour and Mannerism in the Class

Teacher's behaviour was observed in the classes taught by them to find out how they speak, how well they write on blackboard, how they behave with children and whether they remain sitting or standing or keep moving about in the class while teaching. It is expected that a good teacher would speak clearly and not mumble and would pronounce words correctly since children learn pronunciation from teachers. Similarly, teachers' handwriting on blackboard influences students' handwriting and even understanding.

Teachers who move about in the class have better interaction with students and are able to observe individual students closely. Those who keep sitting while teaching are probably least effective in interacting with students. Teachers' behaviour with students was observed since it was felt that the teachers who are friendly with students make them feel comfortable and feel free to ask questions and get their doubts removed. On the other hand, teachers who are very strict inhibit the students and their learning suffers.

3.6.1 Teachers' Quality of Speech

The investigators observed the quality of teachers' speech while they were addressing students in their classes. They noted whether there was clarity in speech and their pronunciation of words was correct. From Table 3.23 which shows the distribution of teachers according to clarity of speech, we find that in Haryana, Maharashtra and Orissa, 62% to 72% teachers of different classes were rated as having 'very good' clarity in speech, but in Assam the percentage of such teachers was quite low (between 21% and 24% in grades II and IV and 40% in grade VI). In Maharashtra, the percentage of such teachers was between 51% and 55% and the speech of very few teachers (0% to 3%) was found to be lacking clarity. The speech of the remaining teachers was moderately clear. In all the states except Haryana, the clarity of speech of grade VI teachers was better than that of grade II or grade IV teachers; in Haryana, the percentage of teachers of grade VI with poor clarity of speech was 3% whereas it was much less in other states.

Table 3.23: Percentage of teachers according to clarity of speech

State	Teachers' speech clarity								
	Very good			Moderately good			Poor		
	Gr II	Gr IV	Gr VI	Gr II	Gr IV	Gr VI	Gr II	Gr IV	Gr VI
Assam	24.3	21.2	40.0	75.8	77.8	58.8	0.0	1.0	1.3
Haryana	67.5	64.3	63.7	32.5	34.0	33.4	0.0	1.7	3.0
Karnataka	51.0	51.8	55.0	48.0	47.2	44.4	1.0	1.0	0.6
Maharashtra	63.0	61.7	72.5	37.0	35.7	26.9	0.0	2.7	0.6
Orissa	63.5	63.3	70.0	36.0	36.0	29.4	0.5	0.7	0.6

The percentage of teachers whose pronunciation was fully correct was fairly high (70% to 85%) in every state except Assam where this percentage was between 50% and 60% (see Table 3.24). There was no difference between teachers of different grades in this respect, except in Maharashtra where grade VI teachers with good pronunciation were more in number than grade II or grade IV teachers. There were less than 2% teachers whose pronunciation was mostly incorrect, except in Orissa where the percentage of such teachers in different grades was between 2% and 3%. The percentage of teachers whose pronunciation of words was found to be 'partly correct' (that is, they pronounced some words correctly and some incorrectly), was substantial (over 30%) in every state except Maharashtra and Orissa where the percentage of such teachers was much less.

Table 3.24: Percentage of teachers according to correctness of pronunciation

State	Teachers' pronunciation								
	Fully correct			Partly correct			Mostly incorrect		
	Gr II	Gr IV	Gr VI	Gr II	Gr IV	Gr VI	Gr II	Gr IV	Gr VI
Assam	59.9	51.5	50.6	39.4	48.0	49.4	0.8	0.5	0.0
Haryana	70.5	69.3	70.8	29.5	30.0	28.0	0.0	0.7	1.2
Karnataka	76.0	70.1	64.4	23.0	29.6	33.8	1.0	0.3	1.9
Maharashtra	70.5	73.0	83.1	29.5	25.0	16.3	0.0	2.0	0.6
Orissa	83.5	84.0	85.0	13.5	13.7	13.1	3.0	2.3	1.9

3.6.2 Legibility of Teachers' Writing on Blackboard

As Table 3.25 shows, most of the teachers were rated as having 'very good' or 'moderately good' writing on blackboard in every state. In Assam, the percentage of teachers with 'very good' writing was much less (18% to 26% in grades II to VI) compared to other states where this percentage was between 45% and 75%. The percentage of teachers' with poor legibility of writing was quite low, between 1% and 6%. There was not much grade to grade variation in percentage of teachers with 'very good' or 'moderately good' handwriting except in Maharashtra where the percentage of teachers with very good writing was much higher in grade VI than in other grades.

Table 3.25: Percentage of classes according to legibility of teachers' handwriting on blackboard

State	Legibility of Teachers' handwriting								
	Very good			Moderately good			Poor		
	Gr II	Gr IV	Gr VI	Gr II	Gr IV	Gr VI	Gr II	Gr IV	Gr VI
Assam	23.5	17.7	25.6	75.0	76.3	71.9	1.5	6.1	2.5
Haryana	67.0	54.5	49.4	32.0	44.1	45.2	1.0	1.3	5.4
Karnataka	52.0	46.8	44.4	47.0	50.8	54.4	1.0	2.3	1.3
Maharashtra	63.5	62.7	73.8	35.5	36.0	25.6	1.0	1.3	0.6
Orissa	53.5	57.3	57.5	41.5	38.3	42.5	5.0	4.3	2.5

3.6.3 Teachers' Position while Teaching

The investigators noted whether the teacher continued to remain sitting or standing at one place or kept moving about most of the time while teaching the class. It was found that very few teachers (less than 5%) kept sitting in their chairs while teaching except in Haryana, where this percentage was between 10% and 15% in grades II to VI (see Table 3.26). The percentage of teachers who kept standing at one place while teaching was quite high in Haryana (70% to 75%) in grades II to VI and also in Maharashtra (65% to 85%), but was much less, between 38% and 52% in the other three states. The percentage of classes in which teachers kept

Table 3.26: Percentage of teachers according to whether they remain sitting, standing or keep moving about in the class while teaching

State	While teaching, teacher								
	Kept sitting in chair			Kept standing			Kept moving around		
	Gr II	Gr IV	Gr VI	Gr II	Gr IV	Gr VI	Gr II	Gr IV	Gr VI
Asm	3.0	2.5	3.1	50.0	48.0	50.6	47.0	49.5	46.3
Har	10.0	15.5	12.5	70.0	72.1	74.4	20.0	12.5	13.1
Kar	2.5	1.0	0.0	38.5	51.2	49.4	59.0	47.8	50.6
Mah	2.5	0.3	0.6	64.5	70.3	84.4	33.0	29.3	15.0
Ori	4.5	3.7	1.9	43.0	46.3	46.3	52.5	50.0	51.9

moving ut in the classroom to observe and guide st nts was substantial (around 50%) in Assam, nataka and Orissa and rather low (20% or s) in all grades in Haryana and in grade VI Maharashtra. There was not much differenc n percentage of classes across grades in each these three positions in any state; except Maharashtra where teachers found to be t ing in standing position was much higher) in grade VI compared to other grades.

3.6.4 T hers' Behaviour with Students

W some teachers are friendly with student d give them opportunity to talk freely, rs are strict and do not tolerate any ind pline in the class. Students begin to fear such teachers. It is possible that the same teacher behaves differently in different classes. For example, a teacher could be more strict with students of grade II in order to maintain discipline but less strict in grade IV or VI. As Table 3.27 shows, most of the teachers were found to be friendly and informal with students. Over 65% teachers of different grades were in this category in all the states except Assam, where the percentage of such teachers was less than 60%, the lowest percentage being 47% in grade IV. Most of the remaining teachers were 'somewhat strict' and not friendly with students, the maximum number of such teachers (between 40% and 50%) was in Assam. Very few teachers (less than 7%) were found to be 'very strict' in every state. The percentage of such teachers was more in grade II than in grade IV or VI in Assam, Haryana and Karnataka but in

Table 3.27: Percentage of teachers according to their behavior (strict or friendly) with students

State	With students, teacher is								
	Very strict			Somewhat strict			Friendly and informal		
	Gr II	Gr IV	Gr VI	Gr II	Gr IV	Gr VI	Gr II	Gr IV	Gr VI
Assam	5.3	4.5	1.9	42.5	48.5	40.0	52.3	47.0	58.1
Haryana	6.5	2.0	1.8	23.0	29.3	32.8	70.5	68.7	65.5
Karnataka	4.5	2.3	3.8	12.5	16.2	21.3	83.0	81.5	75.0
Maharashtra	1.5	4.0	0.0	34.0	19.7	11.3	64.5	76.3	88.8
Orissa	4.0	6.3	6.9	18.5	22.7	25.0	77.5	71.0	68.1

Orissa the percentage of such teachers was more (over 6%) in grade IV and VI than in grade II (4.0%). In Maharashtra, the percentage of 'very strict' teachers was negligible except in grade IV, where it was 4%.

3.7 Summary

(i) Amongst the total classes observed, the percentage of multi-grade classes was slightly more in grade II than in grade IV in all the 5 states. Most common teaching strategy in a multi-grade class was teaching one grade and giving assignment to other grade(s)'. This happened in 80% or more classes. Another common situation was when most students of other grades 'sat quietly doing nothing or played games'. This happened in about 10% grade II classes in Assam, Karnataka and Orissa. In Haryana and Orissa, in 10% to 15% classes of grade II, students were engaged in learning of their own. The situation in grade IV is not very different than that in grade II, except that in grade IV more students of'other class(es)' were busy doing their assignments than in grade II, when the teacher was not addressing them.

(ii) More than 95% classes were held in classroom in all the states except in Haryana (86.5% for grade II).The position was much better in grade IV (93.3%) and grade VI (96.4%) in the state. The sitting space and natural light in classroom were adequate in all the classes in all the states except in Assam (varying between 84 1% for grade II to 86.9% for grade IV). The percentage of grade II students attending school in uniform varied from 35.6% in Assam to 74.5% in Karnataka. The position in this respect in grades IV and VI was better. Except a few classes in Haryana (1% in grade II, 0.7% grade IV and 2.3% in grade VI) and Orissa (0.3% in grade IV), all the classes were equipped with one or the other type of blackboard. However, position in respect of satisfactory quality of blackboard and chalk varied from grade to grade within and across states. Percentage of classes with poor quality blackboard and chalk was higher in Assam (20.6% in VI; 32.3% in grade IV), Haryana (6.0% in grade II; 10.7% in grade VI and Orissa (6.5% in grade II; 10.6% in grade VI). In all the states except Assam the quality of blackboard became poorer in higher classes compared to grade II. Percentage of classrooms in which charts were not displayed was more than [illegible]% in the states of Haryana, Karnataka and Orissa. The position in Maharashtra and Assam is better where classrooms without display of charts was much less.

(iii) Percentage of classes in which teachers were not able to control class easily was maximum in Karnataka varying from 68.1 to 75.1, followed by Maharashtra (60.7% to 68.1%). Such incidence was observed to be the lowest in the classes of Orissa where it varied from 13% to 18%. The incidence of punishment to children in grade II classes was least in Karnataka (1.5%).Although incidence of punishment in grade II classes was observed to be the highest (12%) in Maharashtra, only in 1.5% classes, it was in the form of physical punishment. In Haryana, incidence of physical punishment was observed to the highest, (7.0%). Incidence of punishment was comparatively lower in grades IV and VI of Haryana and Maharashtra. Classes were sometimes disturbed while teaching was going on, but the average duration of disturbance was not much; it varied from 2.4 minutes in grade II to 2.8 minutes in grade VI.

(iv) Students of grades IV and VI in 99% or more classes were found to be at least reasonably disciplined whereas the position in this respect was observed to be between 96.5% (in Maharashtra) and [illegible]% (in Orissa). Further, students maintained decorum in more than 70% classes in all the states as they raised their hands to get teacher's permission before answering questions or seeking clarification from teacher. Percentage of grade II classes observed to be noisy varied from 7.5% in Maharashtra to 27% in Orissa. Such situation existed in 10% or more grade IV classes in Assam (11.6%) and Orissa (18.3%) and in grade VI classes in Karnataka (10.6%) and Orissa (13.1%). In more than 89% classes, students were free with teachers in all the states except in Orissa where students were fearful of the teacher and not free with her or him in 15.0% to 17.5% classes.

(v) Teachers in 95% or more classes were friendly and informal or moderately strict. In a very few cases (less than 7%) teachers were found to be very strict. In over 80% of the mixed classes, both girls and boys were at par in respect of interaction with the teacher. In most of the classes (95% or more) teachers taught either standing or moving about in the class in all the states except in Haryana where teachers in 10% to 15% classes were found to be sitting in chair while teaching.

Chapter 4

TEACHERS' ACTIVITIES IN CLASSROOM

4.1 Categorisation of Teacher Activities

The third objective of the study pertains to teachers' activities in the classroom and their relationship with students' activities. As already mentioned, teachers' activities were recorded using a modified session of Stallings' method of classroom observation. According to this method, a class of 30 minutes is split into 10 parts each of 3 minutes duration. Each part, called as Snapshot, was used to observe and record students' and teachers' activities. The first minute of each Snapshot was used for observation and the remaining two minute4s were used for recording the observation.

In the Class Observation Sheet (T[illegible]) schedule, 17 possible activities in wh[illegible] teachers generally engage in a classroom [illegible] listed. In every snapshot, the observers ha[illegible]o observe what the teacher was doing and ti[illegible]e activity in which he/ she was engaged at [illegible] moment. Since there were 10 snapshot obs[illegible]ations for every class, the average time spen[illegible]y teacher on each activity could be estimat[illegible] from the snapshots data.

Activity-wise distribution [illegible] teachers' time was derived for each class and [illegible]h subject in every state. The 17 teacher ac[illegible]ties were divided into 5 categories as follow[illegible]

Category 1 – Student centric activities

Providing feedback to individual or group of students	Generally, there is interaction between [illegible]her and students; students are supposed to be n[illegible] mentally involved, alert and active participants.
Asking questions	
Replying Question/ providing clarifications	
Demonstrating/ helping in use of TLM/ TLE	
Project work/ creative activity	

Category 2 – Teacher centric activities

Lecturing/ verbally explaining	In these activities teachers play active role w[illegible] students remain passive listeners or observers; there [illegible]ot much interaction between them and students; in[illegible]tive and mental processes of students are at a lower le[illegible]
Writing on blackboard and explaining	
Reading from book	
Giving dictation	
Observing or supervising students activity	

Category 3 – Supportive instructional activities

Giving homework or assignment	In these activities, there is no direct teaching but these are important part of teaching learning process.
Correcting homework or test papers	
Encouraging one or more students	

Category 4 – Class management activities

Scolding/ punishing students	These activities refer to non-teaching activities that are common but not a part of teaching learning process,
Class management	

Category 5 – Off task activities

Attending to visitor/ social interaction/ personal work	These activities are in no way conducive to teaching-learning and time spent on them can be considered as lost or wasted.
Idle/ being out of classroom	

Here we shall present the data on teachers' time spent on the above-mentioned 5 broad categories of activities inside classroom. Presentation in the subsequent sections has been organized separately for primary stage classes (i.e. grades II and IV) and upper primary stage classes (grade V[illegible] due to difference in instructional strategy [illegible] these stages.

4.2 Overview of Time Spent on Broad Categories of Teachers' Activities in the Class

It is observed from Table 4.1 that overall teachers spent 2[illegible] of their time in the class on student centric activities. Teachers in Karnataka and Maharashtra states spent more time (about 35%) on student centric activities compared to their counterparts in Assam (26.7%), Haryana (21.5%) and Orissa (26.4%). Most of the remaining time (55% of their time) was spent on teacher centric activities. They spent meager 1.5% time on class management and remained 'off task' for 2.1% of their total time.

4.3 Teachers' Time on Different Activities in Primary Classes

Figures 4.1 and 4.2 show percentage of teachers' time spent on the 5 categories of activities in grade II and grade IV when they were aggregated over states and subjects. It is observed that category wise distribution of time for grade II and grade IV does not show much difference between the two. Time spent on teacher centric activities (Cat. 2) in grade II is marginally less (53.3%) than that in grade IV (56.3%) whereas grade II teachers spent a little more time than grade IV teachers on student centric activities (Cat.1).

Table 4.1: Teachers' time-on-task by category of activities

Teachers' Activity Category	Assam	Haryana	Karnataka	Maharashtra	Orissa	Total
Cat. 1: Student Centric	26.7	21.5	35.3	35.1	26.4	29.0
Cat. 2: Teacher centric	59.5	60.3	51.9	52	50.1	54.8
Cat. 3: Supportive Instructional	10.9	13.1	9.9	10.4	18.0	12.5
Cat. 4: Class Management	1.3	1.1	1.6	1.5	2.2	1.5
Cat. 5: Off Task	1.3	3.5	1.4	0.9	3.3	2.1

Fig. 4.1: Percentage of time teachers spent on different type of activities in gradeII

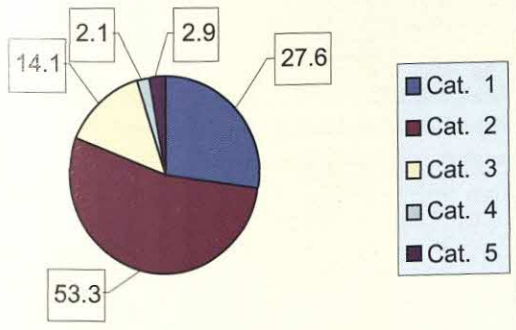


Fig. 4.2: Percentage of time teachers spent on different type of activities in grade IV

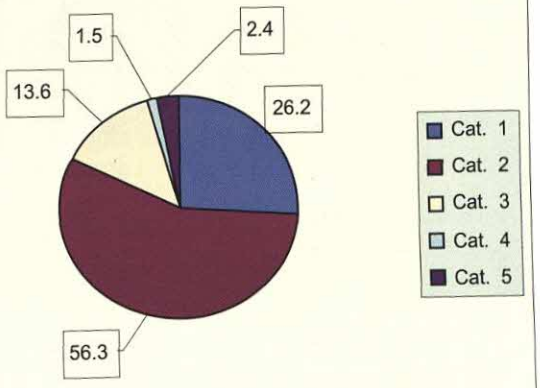


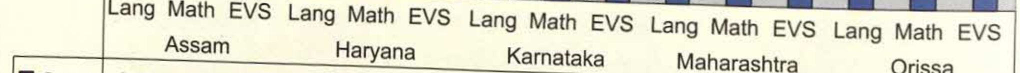
Table 4.2 shows state-wise percentage teachers' time spent on activities of the 5 categories in language and mathematics classes of grade II. It is observed that except Haryana, time spent on student centric activities (Cat 1) is higher for mathematics than that for language in all the 4 states. The difference between the two subjects varied from 6.5 per cent points in Maharashtra to 10.9 per cent points in Karnataka. Further, teachers remained 'Off task' (Cat. 5) for less than 2% of the total time in both the subjects in the states of Maharashtra and Karnataka whereas the 'off task' time of the teachers in language class varied from 2.6% in Orissa to 4.9% in Maharashtra. Teachers' time spent on class management related activities was not more than 3% of their total time in either subject in all the five states

According to Fig. 4.3 time sp nt by grade IV teachers on student centric acti ies (Cat. 1) is consistently higher in EVS class aried from 24.6% for Haryana to 38.1% for harashtra) across all the five states as com d to that in language and mathematics cla xcept in Haryana, teachers of the other 4 stat ent more time on Category 1 activities in hematics class than that in language class. The between the two varied from 3.6% points Orissa to 8.4% points in the case of Haryana chers of grade IV generally remained off (Cat. 5) for not more than 3.2% of their t time in all the five states except in Harya where it was 5.8% in language and 3.6% in m ematics. Class management activities (Cat. 4) nsumed not more than 3% of their total time

Table 4.2: Percentage of time spent on different types of activities by teachers in langua and mathematics classes of grade II

Teachers' activity	Assam		Haryana		Karnataka		Maharashtra		(sa	
	Lang	Math	Lang	Math	Lang	Math	Lang	Math	Lang	Math
Cat. 1	21.4	29.4	20.2	17.4	28.4	39.3	31.5	38	21.5	29.5
Cat. 2	64.4	50.8	59.5	54.7	60.5	44.3	53.2	47.9	51.9	45.6
Cat. 3	9.8	14.1	12.6	20.9	8.4	13.2	11.6	11.1	22.2	17.1
Cat. 4	1.4	2.9	2.8	2.4	1.0	1.5	2.3	2.1	1.8	3.0
Cat. 5	3.2	2.9	4.9	4.6	1.7	1.7	1.4	0.9	2.6	4.8

Fig. 4.3: Percentage of time spent on different types of activities by grade IV teachers



	Assam			Haryana			Karnataka			Maharashtra			Orissa		
	Lang	Math	EVS	Lang	Math	EVS	Lang	Math	EVS	Lang	Math	EVS	Lang	Math	EVS
■ Cat. 5	2.0	1.2	0.0	5.8	3.5	1.6	0.9	1.3	1.1	0.7	1.3	0.8	2.4	3.2	4.7
□ Cat. 4	1.1	1.1	1.7	0.5	0.9	0.5	1.8	1.7	1.9	1.8	2.0	1.7	2.1	2.4	2.6
□ Cat. 3	8.8	14.1	10.6	12.1	18.1	8.9	8.2	14.3	8.5	10.6	14.4	9.1	17.1	20.4	14.9
■ Cat. 2	69.2	56.3	56.5	62.2	60.2	64.3	58.0	45.3	50.7	58.7	50.3	50.3	56.5	48.5	46.3
■ Cat. 1	19.1	27.5	31.2	19.3	17.1	24.6	31.1	37.3	37.6	28.2	32.0	38.1	21.9	25.5	31.5

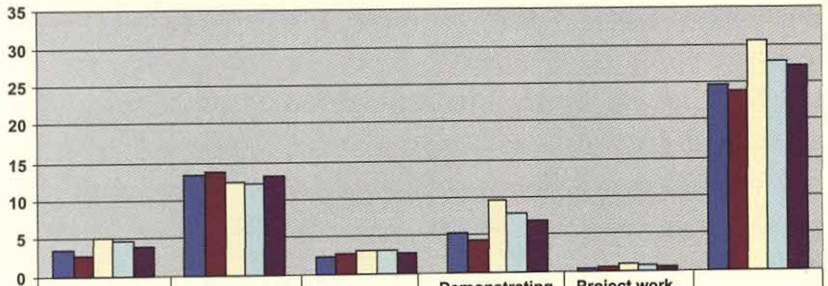
4.3.1 Teachers' Time on Different Student Centric Activities (Category 1)

As shown in to Fig. 4.4, time spent by teachers on 'asking questions' in class is much more than that on any other student centric activity. It is between 12.1% for mathematics and 13.7% for language class of grade IV. The other student centric activity on which more than 4% but less than 10% of time was spent, was demonstration or use of TLM/TLE. In Mathematics class slightly more time was spent on it than in language and Environmental Science (EVS) classes, time spent on project work or creative activity was at the most 1%.

4.3.2 Overall Teachers' Time Spent on Different Teacher Centric (Category 2) Activities

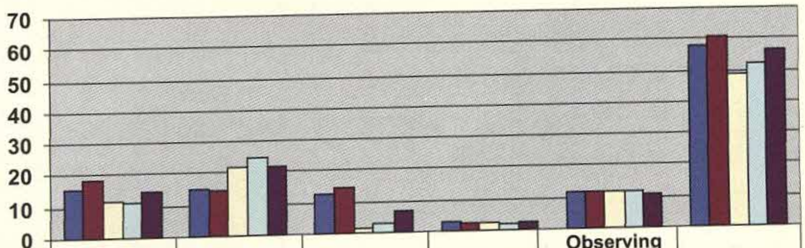
Fig. 4.5 depicts overall time spent on different activities classified as Category 2 activities. It is to be noted that the activities on which teachers spend more than 10% time in grades II and IV are 'lecturing or verbally explaining', 'writing on blackboard

Fig. 4.4: Teachers' time (in %) spent on category 1 activities for grades II and IV



	Providing feedback	Asking questions	Replying questions	Demonstrating / helping use of TLM	Project work /creative activity	CAT 1 Total
■ Lang Grade II	3.3	13.3	2.4	5.1	0.4	24.6
■ Lang Grade IV	2.8	13.7	2.8	4.2	0.5	23.9
□ Math Grade II	4.9	12.3	3.0	9.6	1.0	30.7
□ Math Grade IV	4.5	12.1	2.9	7.8	0.7	27.9
■ EVS Grade IV	3.8	13.2	2.8	6.7	0.6	27.2

Fig. 4.5 : Teachers' time spent on category 2 activities in grades II and IV



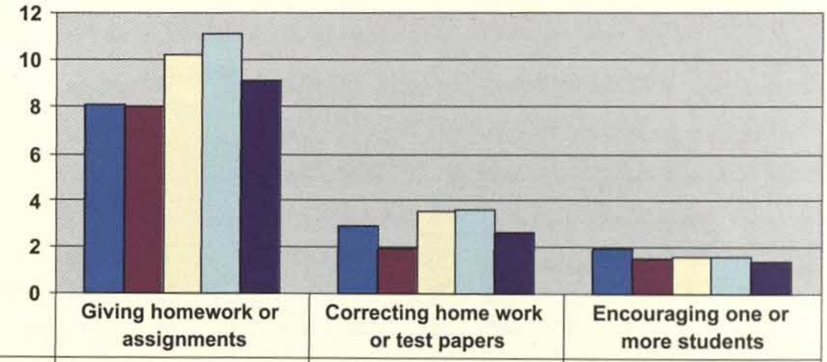
	Lecturing / explaining	Writing on blackboard	Reading from book	Giving dictation	Observing /supervising students' activities	CAT 2 Total
■ Lang Grade II	15.6	15.1	12.6	2.9	11.7	57.9
■ Lang Grade IV	18.3	14.5	14.6	2.1	11.4	60.9
□ Math Grade II	11.5	21.7	1.5	2.2	11.7	48.7
□ Math Grade IV	11.3	25.0	2.4	1.8	11.6	52.1
■ EVS Grade IV	14.7	21.8	6.8	2.2	10.7	56.1

and explaining', and 'observing or supervising student activity'. Time spent on the activity 'reading from the book' was more than 12.6% in language class whereas in mathematics class time spent on this activity was less than 2.5%.

4.3.3 Teachers' Time Spent on Different Supportive Instructional Activities (Category 3)

As shown in Fig. 4.6, on the basis of aggregated data of all the 5 states, we find that comparatively more time, 'varying from 7.9% to 11.1% of total teachers' time, was spent on 'giving homework or assignment'. Some classroom teaching time was also spent on 'correcting homework or test papers', but the time spent on this activity was less than 4%. Further, teachers spent less than 2% of their classroom time on 'encouraging or praising students'.

Fig. 4.6: Teachers' time (in %) spent on category 3 activities for grades II and IV



	Giving homework or assignments	Correcting home work or test papers	Encouraging one or more students
■ Lang Grade II	8.1	2.9	1.9
■ Lang Grade IV	8.0	1.9	1.5
□ Math Grade II	10.2	3.5	1.6
□ Math Grade IV	11.1	3.6	1.6
■ EVS Grade IV	9.1	2.6	1.4

4.4 Teachers' Time on Different Activities in Grade VI

Fig.4.7 presents over all time spent on different categories of teachers' activity of grade VI. Of the total classroom instruction time, teachers remained off task (Category 5) for 2.1% and 1.5% time they spent on class management (Category 4). In both categories, the time spent were slightly less than that spent in the primary classes (refer Fig. 4.1 & 4. 2). Time spent on student centric activities (category 1) was about 31% which is higher by about 3% point than that for primary classes.

Fig. 4.7: Percentage of time teachers spent on different activities in grade VI

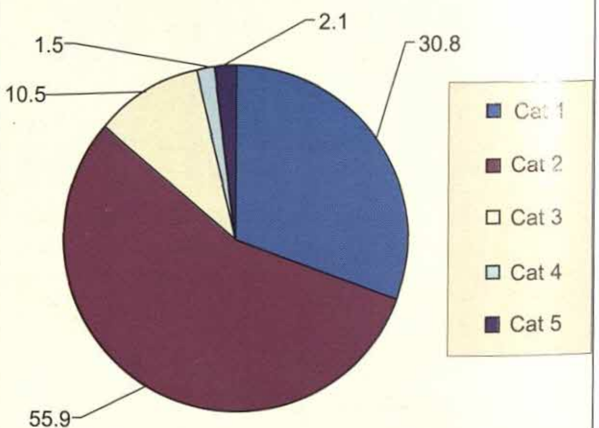
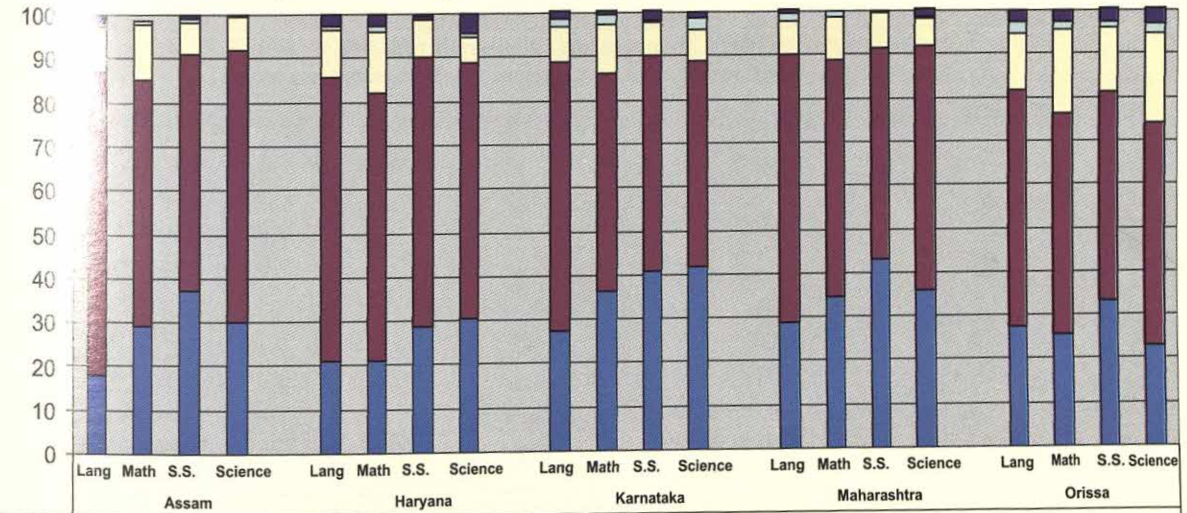


Fig. 4.8 provides state wise and subject wise distribution of time over the five categories of teachers' activities in grade VI. Maximum time spent b teachers on student centric activities (Categ 1) was 37.3% in Assam, 43.1% in Mahar ra and 33.1% in Orissa in the classes of soc udies. In the states of Haryana and Karna maximum time 30.7% and 42.0% respec was spent on Category 1 activities in sci classes. Minimum time on the same activi language class was spent in Assam (18.0 laryana (21.0%), Karnataka (27.6%) and M ashtra (28.6%). In the case of Orissa, it was % for science subject. Maximum time spent acher centric (Category 2) activities in langua nathematics, social studies and science subjec e respectively 69.0% (in Assam), 61.1% (in Ha na), 61.9% (in Haryana) and 62.0% (in Assam) inimum time spent on category 2 activiti n these subjects respectively is 53.8% (in Orissa), 49.8% (in Karnataka), 46.2% (in Orissa) and 46.8% (in Karnataka).

4.4.1 Teachers' Time Spent on Different Student Centric Activities (Category 1) for Grade VI

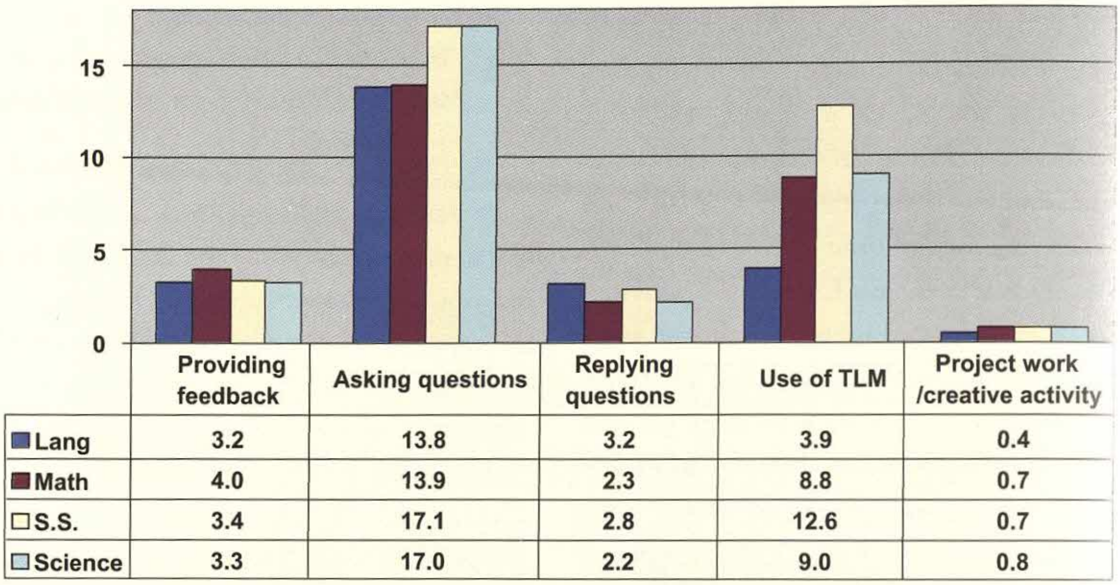
Fig 4.9 indicates that time spent by teachers on 'providing feedback to students' did not vary across subjects. On the contrary, in respect of activities like 'asking questions' and 'use of TLM' there was considerable variation across subjects. Language and mathematics recorded low value (13.8%) as against the other two subjects (about 17%) in respect of time devoted to 'asking questions'. Time spent on the use of TLM was the least (3.94%) in language and the highest (12.64%) in social studies (S.S.) class. Time spent on 'project work or creative activity' was the least, less than 1% in every subject.

Fig. 4.8: Percentage of time spent by teachers in grade VI class



	Assam				Haryana				Karnataka				Maharashtra				Orissa			
	Lang	Math	S.S.	Science	Lang	Math	S.S.	Science	Lang	Math	S.S.	Science	Lang	Math	S.S.	Science	Lang	Math	S.S.	Science
■ Cat. V	1.5	0.2	0.7	0.0	2.9	2.9	0.7	4.3	1.8	0.8	2.0	1.5	0.8	0.5	0.3	1.3	2.5	2.8	3.0	3.5
□ Cat. IV	0.7	1.0	1.0	0.5	0.5	1.2	0.2	1.0	1.8	2.0	0.5	2.3	1.5	1.0	0.5	0.5	2.8	1.8	1.5	2.3
□ Cat. III	10.7	12.7	7.1	7.5	11.0	13.6	8.5	5.5	7.8	11.1	7.4	7.5	8.1	9.8	8.1	6.3	13.2	19	14.5	20.3
■ Cat. II	69.0	55.7	53.9	62.0	64.7	61.1	61.9	58.5	61.4	49.8	49.6	46.8	61.4	54.2	48.3	56.3	53.8	51	48.2	51.1
■ Cat. I	18.0	29.5	37.3	30.0	21.0	21.3	28.5	30.7	27.6	36.6	40.9	42.0	28.6	34.9	43.1	35.8	27.8	25.5	33.1	23.1

Fig. 4.9: Teachers' time (in %) on Category 1 activities for grade VI

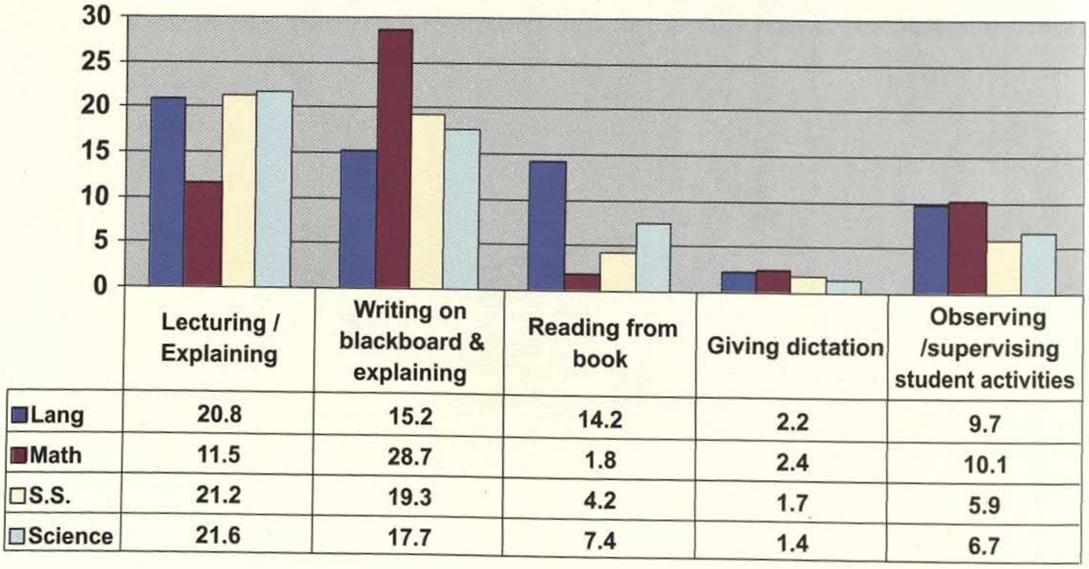


	Providing feedback	Asking questions	Replying questions	Use of TLM	Project work /creative activity
■ Lang	3.2	13.8	3.2	3.9	0.4
■ Math	4.0	13.9	2.3	8.8	0.7
□ S.S.	3.4	17.1	2.8	12.6	0.7
□ Science	3.3	17.0	2.2	9.0	0.8

4.4.2 Teachers' Time Spent on Different Teacher Centric Activities (Category 2) in Grade VI

Fig 4.10 presents distribution of teacher centric (Category 2) activities in the different subjects of grade VI. 'Lecturing or verbally explaining' took one fifth of teachers' instru on time in language, social studies and sci e subjects, but only 11.5% time in mathem cs but in this subject, time spent on 'writin n blackboard and explaining' consumed 2 % teachers' time. The third activity on w h teachers spent substantial time (14.2%) s

Fig. 4.10: Teachers' time (in %) on category 2 activities for grade VI



	Lecturing / Explaining	Writing on blackboard & explaining	Reading from book	Giving dictation	Observing /supervising student activities
■ Lang	20.8	15.2	14.2	2.2	9.7
■ Math	11.5	28.7	1.8	2.4	10.1
□ S.S.	21.2	19.3	4.2	1.7	5.9
□ Science	21.6	17.7	7.4	1.4	6.7

‘reading from book’ in language class but not in other subjects.

4.4.3 Over all Teacher's Time on Different Supportive Instructional Activities (Category 3)

hers’ time spent on ‘giving home work or ass ent’ varied between 7% and 9% across the f bjects. Correcting home work or test paper k more time. (3.4%) in mathematics class nly between 1% and 1.4% in other subje

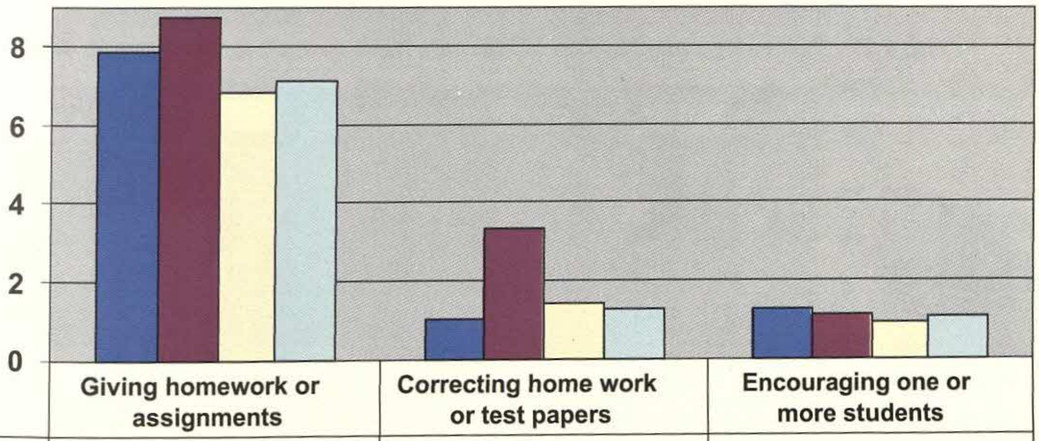
4.5 chers’ Time Spent on Different ivities Across States, Subjects d Grades

preceding sections presented time teach spent on different activities across grade d subjects. In this section, variation in pe tage of time spent on each of the 13 a ties (excluding class management and ask) across different states has been discu . The discussion is organized in the three tions: Sections 4.5.1, 4.5.2 and 4.5.3 covering activities of Category 1, Category 2 and Category 3 respectively. The percentages corresponding to the different activities are shown in Tables A1, A2 and A3 of Annex A.

4.5.1 Teachers’ Time on Category 1 Activities in Different States

Table A1 at Annex A shows that teachers spent more than 10% of their total time on asking questions in all the three grades and also in each subject with a few exceptions such as grade IV and grade VI language classes in Assam and grade II mathematics class in Haryana, where this percentage is slightly less than 10%. On other Category1 activities (e.g. providing feedback, answering questions, use of TLM and project work) teachers spent much less time in every state irrespective of class and subject taught. Maximum time was spent on ‘asking questions’ in science and social science classes of grade VI. Further, time spent on this activity, on the whole, is comparatively less in Assam and Orissa. In particular, project work and creative activities found very little time generally below 1%

Fig. 4.11: Teacher time (in %) on category 3 activities for grade VI



	Giving homework or assignments	Correcting home work or test papers	Encouraging one or more students
■ Lang	7.9	1.0	1.3
■ Math	8.8	3.4	1.1
□ S.S.	6.8	1.4	0.9
□ Science	7.1	1.3	1.0

with Karnataka as an exception where this time varied from 1% to 3%. It is to be noted that in grade VI in Orissa there was no project work related activity. Time spent by teachers on the remaining three teachers' Category 1 activities varied not only across state and subjects but across grades also.

4.5.2 Teachers' Time spent on Category 2 Activities in Different States

It is observed from Table A2 at Annex A, that 'lecturing/ verbally explaining' and 'writing on blackboard' consumed most of the teachers' time. 'Observing or supervising students' also consumed substantial time of teachers' but slightly less than the above mentioned two activities. Time on lecturing was found to be varying from 7.9% to 29.3% across grades and subjects whereas the extent variation observed in the case of Orissa was from 9.3% to 20.3%. In other states the variation in time was in between about 10% and about 24%. Time spent on writing on blackboard presented almost the same distribution of time as that of lecturing in Orissa. In the case of Maharashtra, time spent on writing on blackboard indicated minimum variation across subjects and grades.

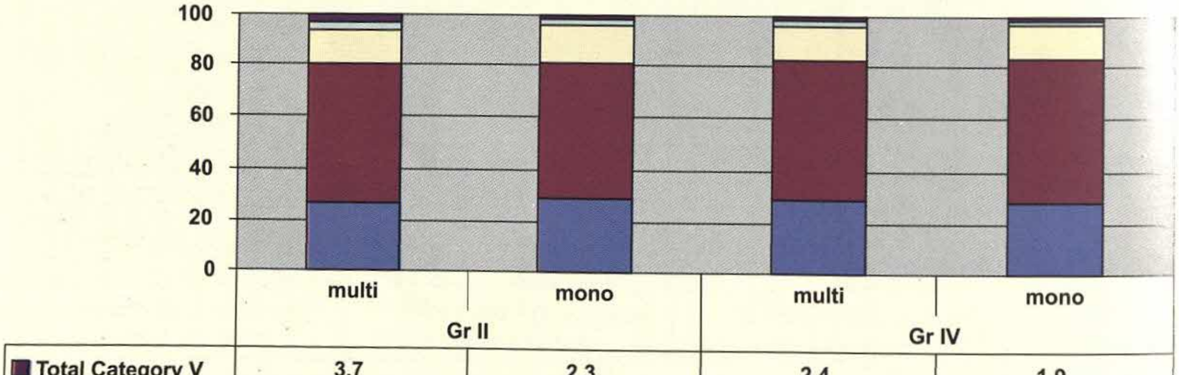
4.5.3 Teachers' Time Spent on Category 3 Activities in Different States

In this category, the three activities are (i) giving homework, (ii) correcting home work or test papers and (iii) Encouraging one or more students. It is seen from Table A3 at Annex A that teachers spent more time on giving home work or assignment as compared to other two activities. It varied from 4.8% to 13.3%. Obviously, maximum time spent on this activity is in mathematics in all the states with Orissa as an exception where it is science. Maximum teachers' time on correcting homework was also observed in Mathematics in every grade with Maharashtra and Karnataka as an exception. Teachers in science class of grade VI in Karnataka and Maharashtra spent no time on correcting homework or test paper. Incidence of teachers encouraging one or more students varied from 0.8% in EVS class of Haryana to 3.3% in language class of grade II in Orissa.

4.6 Teachers' Time-on-Task in Multi Grade and Mono Grade Classes

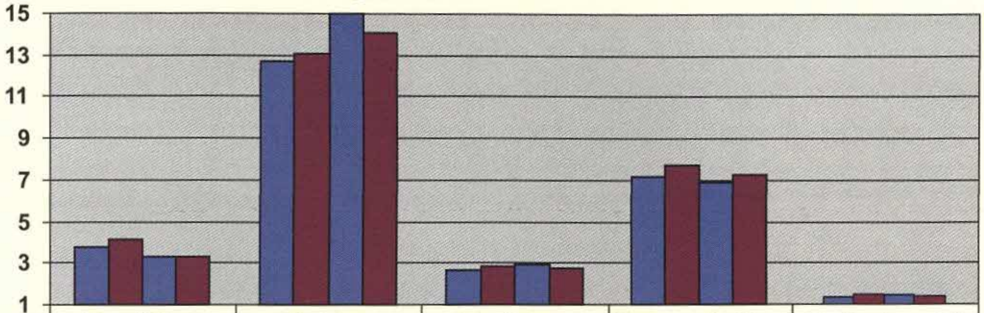
It was of interest to find out whether teachers' time spent on different types of activities is same or not in mono-grade and multi-grade classes. According to Fig. 4.12, total time spent

Fig. 4.12: Percentage distribution of teachers' time in multi & mono grade classes



	Gr II multi	Gr II mono	Gr IV multi	Gr IV mono
■ Total Category V	3.7	2.3	2.4	1.9
□ Total Category IV	2.4	1.9	1.7	1.5
□ Total Category III	14.1	14.4	13.1	12.6
■ Total Category II	53.1	52.9	54.1	55.8
■ Total Category I	26.8	28.5	28.8	28.1

Fig. 4.13: Percentage of teachers time spent on category 1 activities in mono & multi grade classes



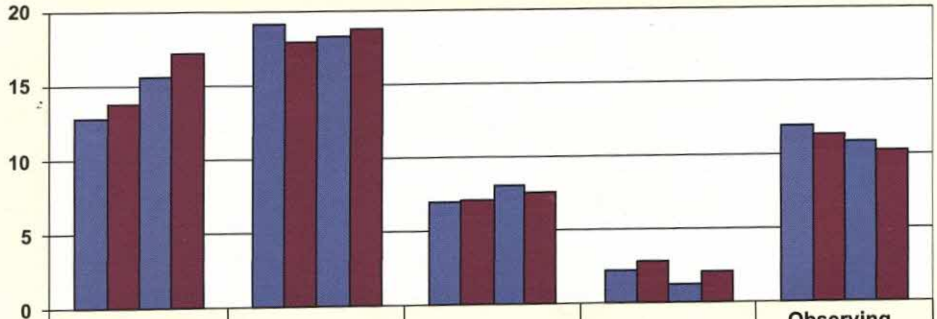
	Providing feedback	Asking Questions	Replying questions	Demonstrating/ helping use of TLM	Project work/ creative activity
Gr II (Multi)	3.7	12.7	2.6	7.2	0.6
Gr II (Mono)	4.2	13.0	2.8	7.8	0.8
Gr IV (Multi)	3.3	15.0	2.9	6.9	0.7
Gr IV (Mono)	3.3	14.1	2.8	7.3	0.6

by chers on different categories of activities did t indicate discernible difference between m and multi grade classes of grades II and IV. e minor differences indicated by the data co be attributed to sampling fluctuation and nc any real difference.

Also there is not much difference between m -grade and multi-grade classes in respect of time spent by teachers on individual activities of Category 1 as shown in Fig. 4.13.

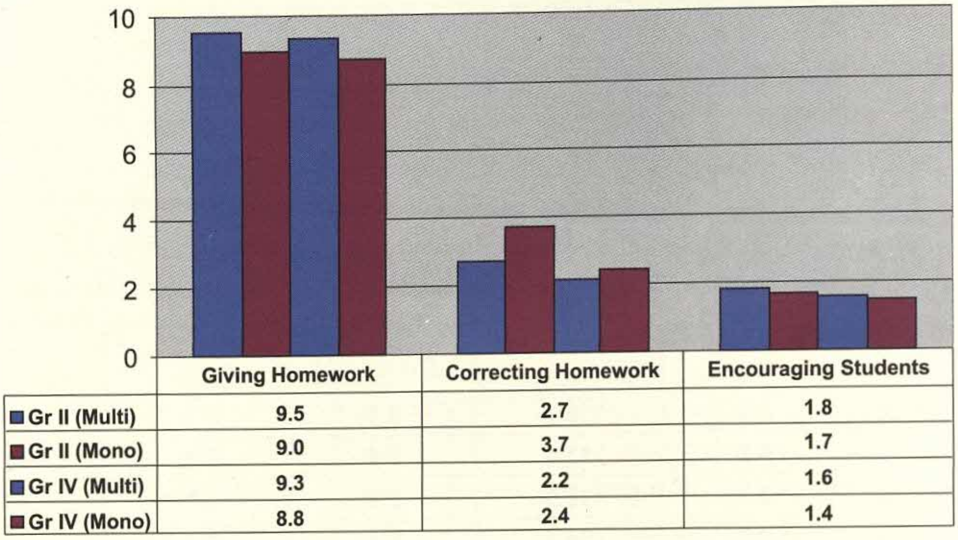
The difference of time spent between mono and multi grade classes could not be observed in respect of activities of Category 2 also as Fig 4.14 shows. It appears that teachers teach both mono-grade and multi-grade classes in the same way.

Fig. 4.14: Percentage of teachers time spent on category 2 activities in mono & multi grade classe



	Lecturing/explaining Orally	Writing on blackboard	Reading from book	Giving dictation	Observing /supervising students activity
🟦 Gr II (Multi)	12.9	19.1	6.9	2.3	11.9
🟥 Gr II (Mono)	13.8	17.9	7.1	2.8	11.3
🟦 Gr IV (Multi)	15.6	18.2	8.1	1.3	10.8
🟥 Gr IV (Mono)	17.1	18.7	7.6	2.2	10.3

Fig. 4.15: Percentage of teachers time spent on category 3 activities in mono & multi grade classes



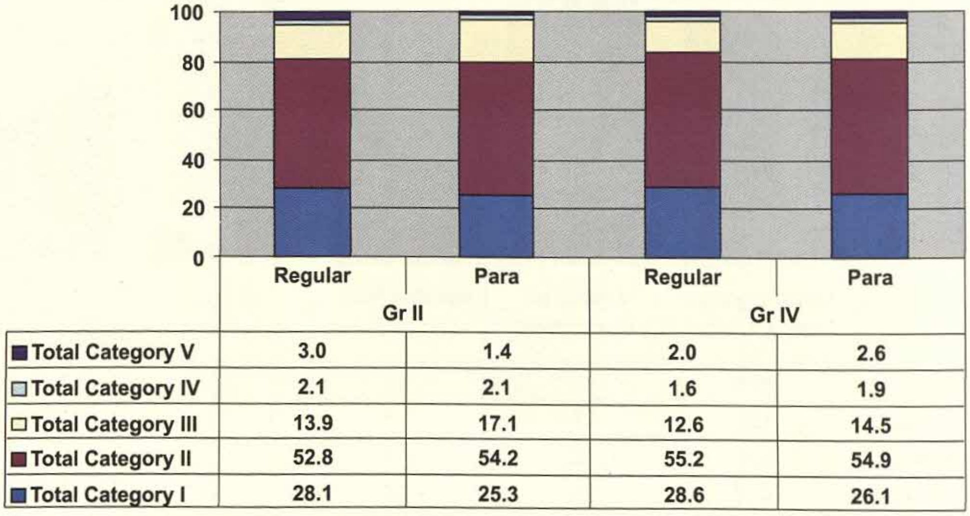
	Giving Homework	Correcting Homework	Encouraging Students
■ Gr II (Multi)	9.5	2.7	1.8
■ Gr II (Mono)	9.0	3.7	1.7
■ Gr IV (Multi)	9.3	2.2	1.6
■ Gr IV (Mono)	8.8	2.4	1.4

The situation remained the same for activities of Category 3 (providing support to instruction (as presented in Fig. 4.15).

4.7 Time-on-Task of Regular Teachers and Para Teachers for Grade II and IV Classes

As there are two types of teachers in most schools-regular teachers and para-teachers, the latter being employed on contract basis with much less remuneration. Most of them do not have any teacher training qualification that regular teachers have. Comparison of these two types of teachers was needed to find out whether time spent by them on different activities same or not. Time spent on different categories of activities by regular teachers and para teachers is presented in Fig. 4.16. It is observed that regular teachers spent slightly more time than para teachers on student centric activities

Fig. 4.16: Percentage distribution of time for multi & mono grade classes

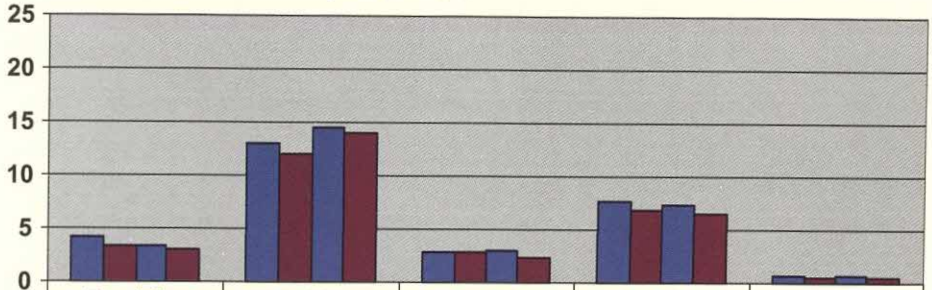


	Gr II		Gr IV	
	Regular	Para	Regular	Para
■ Total Category V	3.0	1.4	2.0	2.6
■ Total Category IV	2.1	2.1	1.6	1.9
□ Total Category III	13.9	17.1	12.6	14.5
■ Total Category II	52.8	54.2	55.2	54.9
■ Total Category I	28.1	25.3	28.6	26.1

(category 1) and also on activities of providing support to classroom instruction (Category 3). Time on teachers remaining off task (Category 5) and on class management (category 4) did not show any difference between the two types of teachers.

Fig.4.17 presents distribution of time on individual activities of student centric category (Category 1). Here again, there is hardly any difference between regular teachers and para teachers.

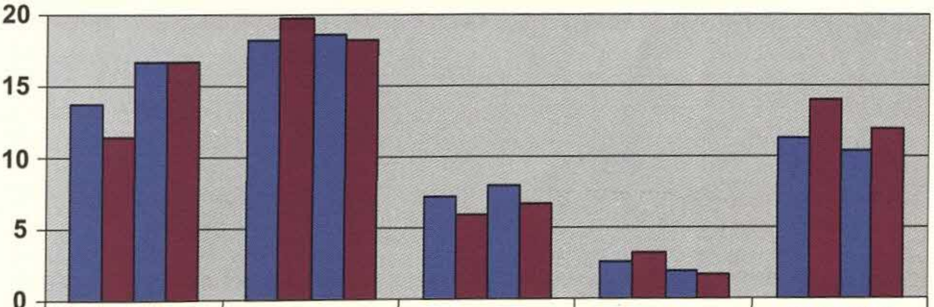
Fig. 4.17: Percentage of time spent on category 1 activities by regular & para teachers



	Providing feedback	Asking questions	Replying questions	Demonstrating TLM	Project work/ creative activity
🟦 Gr II (Regular)	4.1	13.0	2.7	7.6	0.7
🟥 Gr II (Para))	3.2	12.1	2.8	6.7	0.5
🟦 Gr IV (Regular)	3.3	14.5	2.9	7.2	0.7
🟥 Gr IV (Para)	2.9	14.0	2.3	6.4	0.5

Fig. 4.18 shows comparison of time spent on different teacher centric activities (Category 2) between regular and para teachers. In grade II, regular teachers spent slightly more time than para teachers on 'lecturing or verbally explaining', 'reading from book' whereas in the case of the remaining activities the time spent by regular teachers was less than that of para teachers. The

Fig. 4.18: Percentage of time spent on category 2 activities by regular & para teachers

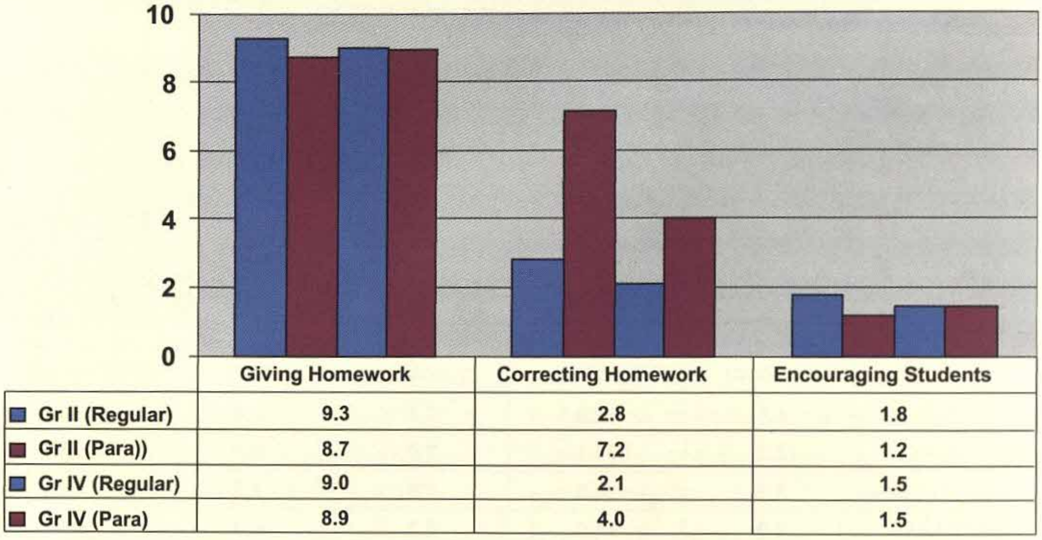


	Lecturing/ explaining Orally	Writing on blackboard	Reading from book	Giving dictation	Observing /supervising students' activity
🟦 Gr II (Regular)	13.7	18.2	7.1	2.5	11.3
🟥 Gr II (Para))	11.4	19.8	5.9	3.1	14.0
🟦 Gr IV (Regular)	16.5	18.6	7.9	1.9	10.3
🟥 Gr IV (Para)	16.6	18.2	6.7	1.6	11.9

difference between the two was, however, not much in the case of all five activities.

Grade II and IV para teachers (Fig. 4.19) spent more time on correcting home work than the regular teachers whereas time spent on other supportive instructional activities did not display much difference between them.

Fig. 4.19: Percentage of time spent on category 3 activities by regular & para teachers

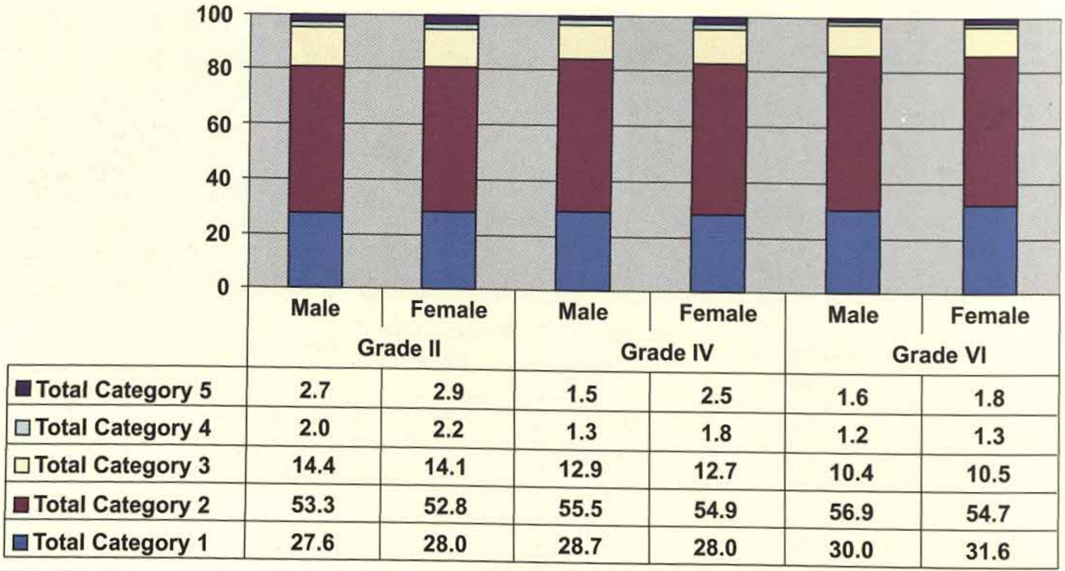


	Giving Homework	Correcting Homework	Encouraging Students
🟦 Gr II (Regular)	9.3	2.8	1.8
🟥 Gr II (Para))	8.7	7.2	1.2
🟦 Gr IV (Regular)	9.0	2.1	1.5
🟥 Gr IV (Para)	8.9	4.0	1.5

4.8 Time–on-Task of Male and Female Teachers for Grade II, IV and VI Classes

The difference between male and female teachers was also worth finding in respect of time spent on different activities in the class while teaching. Fig. 4.20 shows distribution of time spent on different categories of activities for male and female teachers. There is hardly any difference between male and female teachers in

Fig. 4.20: Percentage distribution of time for male & female teachers



	Male	Female	Male	Female	Male	Female
	Grade II		Grade IV		Grade VI	
■ Total Category 5	2.7	2.9	1.5	2.5	1.6	1.8
□ Total Category 4	2.0	2.2	1.3	1.8	1.2	1.3
□ Total Category 3	14.4	14.1	12.9	12.7	10.4	10.5
■ Total Category 2	53.3	52.8	55.5	54.9	56.9	54.7
■ Total Category 1	27.6	28.0	28.7	28.0	30.0	31.6

different categories of teachers' activities in the classroom.

Also under student centric (Category 1) activities presented in Fig. 4.21, both male and female teachers spent almost the same time on each one. The same is true for activities under Category 2 (teacher centric) and the Category 3 (supportive instructional activities) (see Fig 4.22 & Fig 4.23). Both male and female teachers show the same pattern in respect of time spent on different activities under both categories.

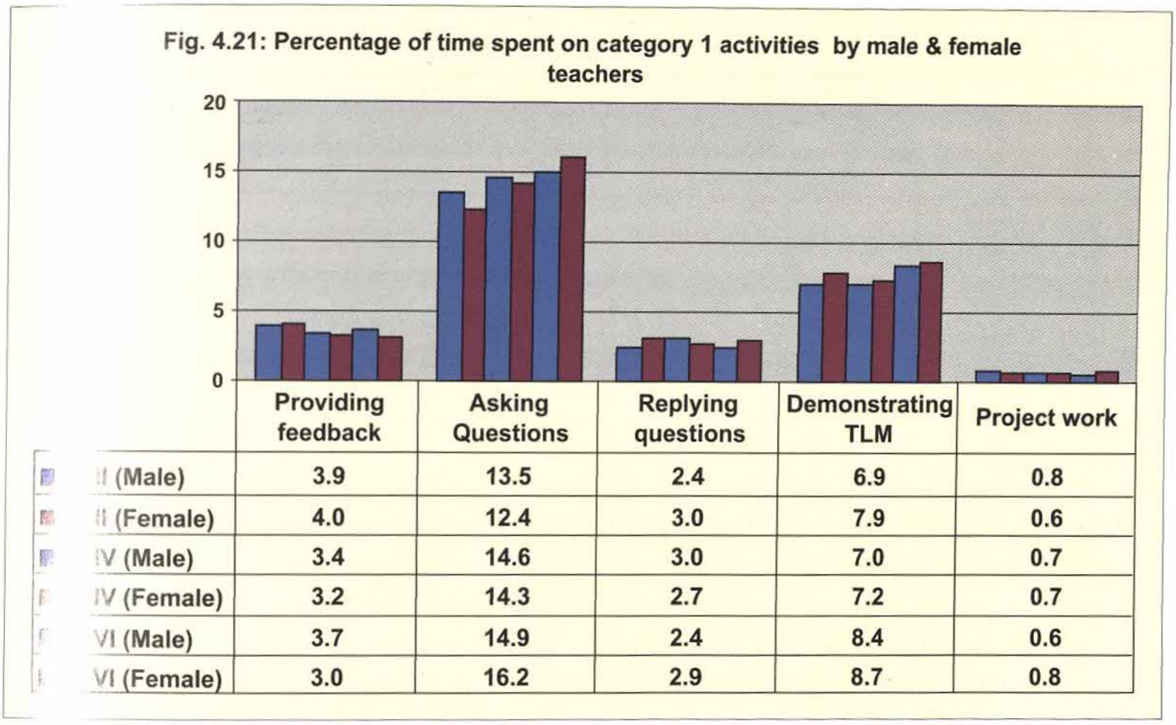


Fig. 4.21: Percentage of time spent on category 1 activities by male & female teachers

	Providing feedback	Asking Questions	Replying questions	Demonstrating TLM	Project work
🟦 II (Male)	3.9	13.5	2.4	6.9	0.8
🟥 II (Female)	4.0	12.4	3.0	7.9	0.6
🟦 IV (Male)	3.4	14.6	3.0	7.0	0.7
🟥 IV (Female)	3.2	14.3	2.7	7.2	0.7
🟦 VI (Male)	3.7	14.9	2.4	8.4	0.6
🟥 VI (Female)	3.0	16.2	2.9	8.7	0.8

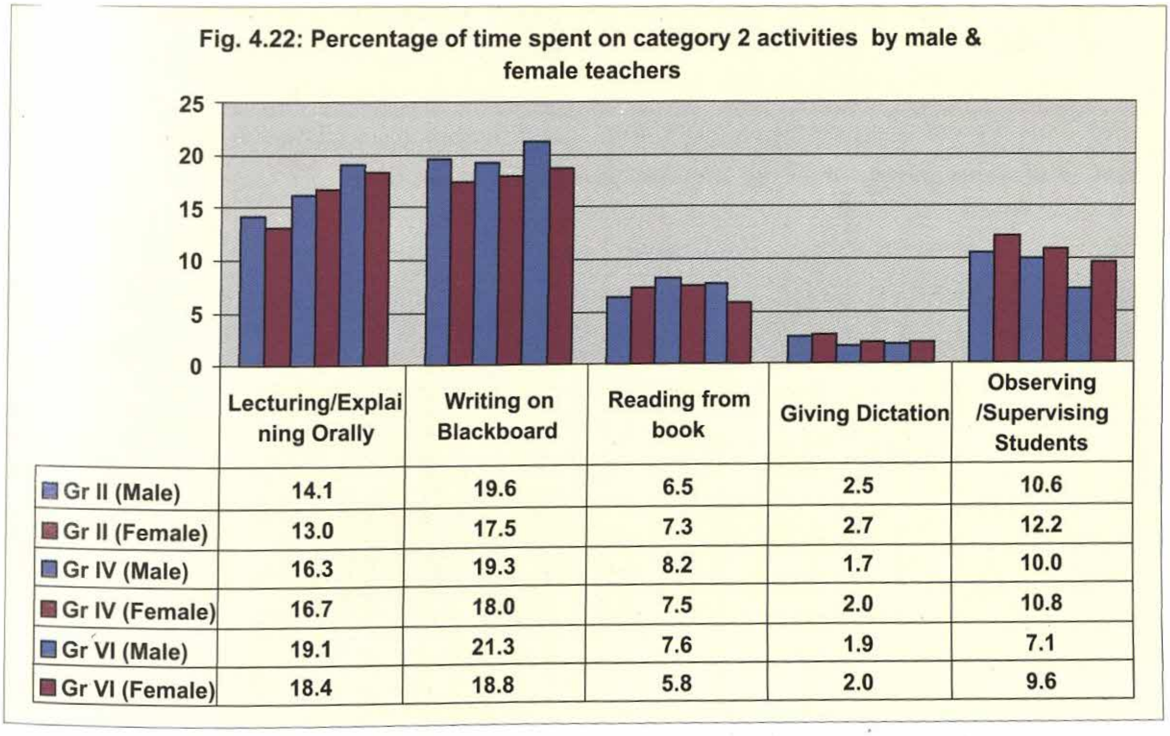
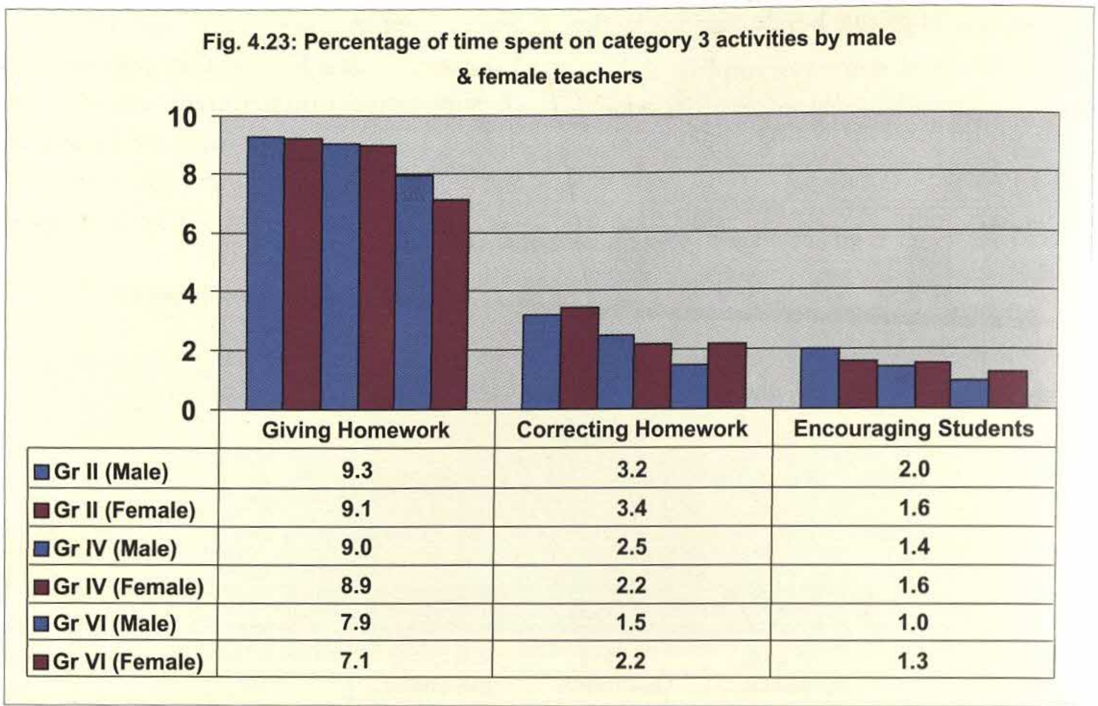


Fig. 4.22: Percentage of time spent on category 2 activities by male & female teachers

	Lecturing/Explaining Orally	Writing on Blackboard	Reading from book	Giving Dictation	Observing /Supervising Students
🟦 Gr II (Male)	14.1	19.6	6.5	2.5	10.6
🟥 Gr II (Female)	13.0	17.5	7.3	2.7	12.2
🟦 Gr IV (Male)	16.3	19.3	8.2	1.7	10.0
🟥 Gr IV (Female)	16.7	18.0	7.5	2.0	10.8
🟦 Gr VI (Male)	19.1	21.3	7.6	1.9	7.1
🟥 Gr VI (Female)	18.4	18.8	5.8	2.0	9.6

Fig. 4.23: Percentage of time spent on category 3 activities by male & female teachers



	Giving Homework	Correcting Homework	Encouraging Students
🟦 Gr II (Male)	9.3	3.2	2.0
🟥 Gr II (Female)	9.1	3.4	1.6
🟦 Gr IV (Male)	9.0	2.5	1.4
🟥 Gr IV (Female)	8.9	2.2	1.6
🟦 Gr VI (Male)	7.9	1.5	1.0
🟥 Gr VI (Female)	7.1	2.2	1.3

4.9 Temporal (Snapshot to Snapshot) Variation in Teachers' Activities

As already mentioned earlier, 30 minutes duration of a class was split into 10 parts. First minute of each part of 3 minutes duration is termed as a Snapshot. A teacher performed one or the other of the 17 listed activities in each Snapshot. This section attempts to examine the snapshot to snapshot variation in the frequency of a few selected activities. For this purpc , ten Snapshots in a class were listed as S1, S2,. S10 in sequence (S1 being the first snapshot, the second and so on).

Of the 13 academic activities of tc ıers, (under Categories 1, 2 and 3) it was con red worthwhile to examine the temporal distr ion only for the following 7 activities in la age and mathematics classes on which teacher ent 5% or more time.

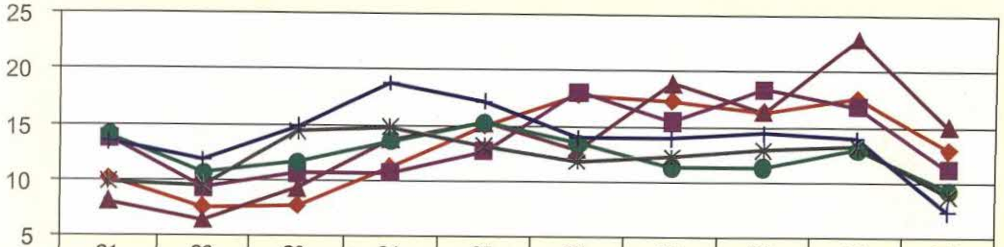
Table 4.3: Teachers' activities for which time spent was 5% or more

Activity(Category)	Grades included for	
	Language	Mathema cs
Asking questions (Cat 1)	II, IV,VI	II, IV,V
Demonstrating TLM/ TLE (Cat 1)	-	II, IV,VI
Lecturing (Cat 2)	II, IV,VI	II, IV,VI
Writing on blackboard (Cat 2)	II, IV,VI	II, IV,VI
Reading from book (Cat 2)	II, IV,VI	
Observing or supervising students' activity (Cat 2)	II, IV,VI	II, IV,VI
Giving homework (Cat 3)	VI	II, IV,VI

(Cat 1: student Centric; Cat 2: teacher Centric; Cat 3: Supportive instructional)

Fig. 4.24 shows the percentage of classes in which the activity ‘asking question’ is taking place in snapshot S1, S2, S3,……, S10. It is seen that the incidence of ‘asking question’ by the teacher was relatively low during second and third Snapshots and high in the 4th and again in seventh to ninth Snapshots. Teachers asked questions mostly in the ninth Snapshot (about 23% classes). The pattern was similar in all the three classes. In mathematics, however, the incidence of ‘asking question’ was spreadly almost uniformly over the 30 minute period without any pronounced peaks at the beginning or at the end.

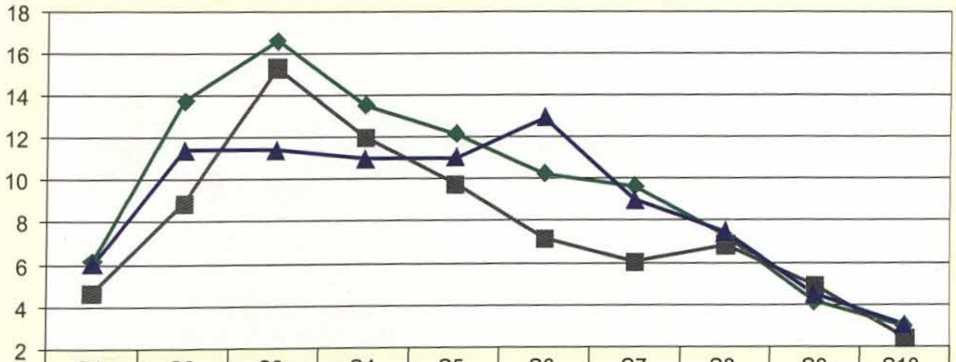
Fig 4.24: Temporal distribution of classes in respect of ‘asking question’



	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
Lang Gr II	10.1	7.5	7.7	11.2	14.9	17.7	17.2	16.2	17.5	12.8
Lang Gr IV	13.8	9.3	10.6	10.8	12.7	18.0	15.4	18.3	16.8	11.2
Lang Gr VI	8.0	6.3	9.2	13.6	15.2	12.8	18.8	16.3	22.8	14.9
Math Gr II	14.0	10.5	11.5	13.5	15.1	13.4	11.3	11.3	12.9	9.2
Math Gr IV	9.9	9.5	14.4	14.8	13.2	11.8	12.3	12.9	13.3	8.7
Math Gr VI	13.4	11.8	14.8	18.6	17.1	13.8	13.8	14.3	13.9	7.3

[illegible]monstrating or helping students in the use of TLM/TLE’ was observed mostly in mathematics classes only. Incidence of this activity in mathematics classes (refer Fig. 4.25) gradually decreased from third to tenth Snapshot. Grade VI showed lesser variation over time than grades II and IV.

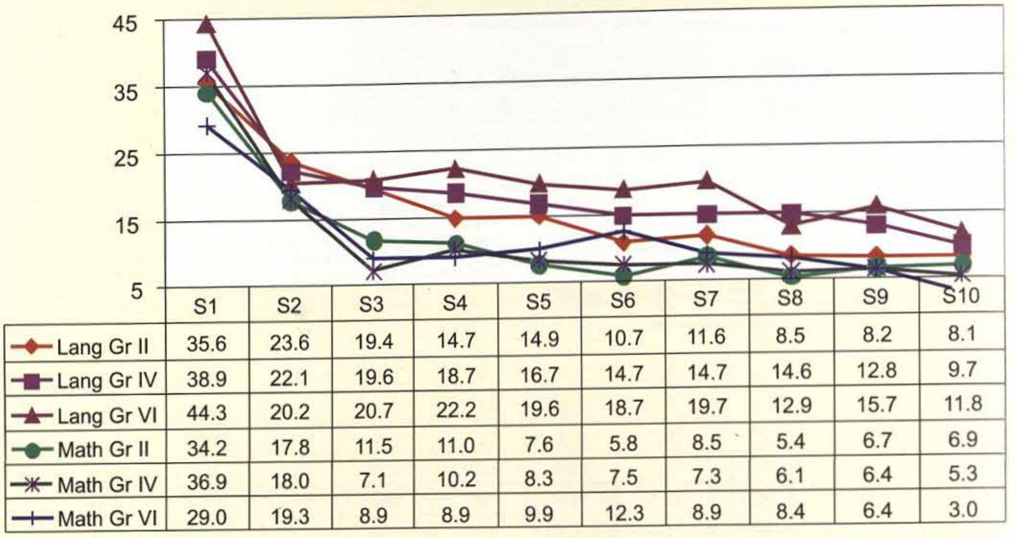
Fig 4.25: Temporal distribution of classes in demonstrating/ helping use of TLM/ TLE



	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
◆ Math Gr II	6.1	13.7	16.5	13.5	12.1	10.2	9.6	7.2	4.1	2.9
■ Math Gr IV	4.6	8.8	15.3	12.0	9.8	7.1	6.0	6.8	4.9	2.4
▲ Math Gr VI	6.0	11.4	11.4	10.9	11.0	12.9	8.9	7.4	4.4	3.0

Fig. 4.26 shows that teachers mostly 'lectured or verbally explained' during the first Snapshot. This activity was more common in languages classes in all the Snapshots than in mathematics. Even among language classes, 'lecturing' was maximum in grade VI in almost all the Snapshots but much more in the first six minutes (first 2 Snapshots).

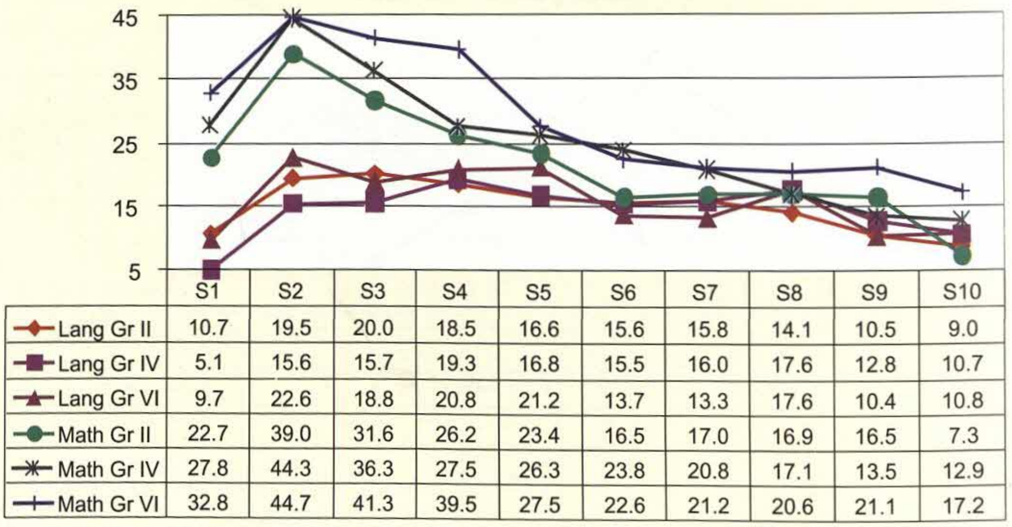
Fig 4.26: Temporal distribution of classes in respect of 'Lecturing/ verbally explaining'



	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
Lang Gr II	35.6	23.6	19.4	14.7	14.9	10.7	11.6	8.5	8.2	8.1
Lang Gr IV	38.9	22.1	19.6	18.7	16.7	14.7	14.7	14.6	12.8	9.7
Lang Gr VI	44.3	20.2	20.7	22.2	19.6	18.7	19.7	12.9	15.7	11.8
Math Gr II	34.2	17.8	11.5	11.0	7.6	5.8	8.5	5.4	6.7	6.9
Math Gr IV	36.9	18.0	7.1	10.2	8.3	7.5	7.3	6.1	6.4	5.3
Math Gr VI	29.0	19.3	8.9	8.9	9.9	12.3	8.9	8.4	6.4	3.0

'Writing on blackboard and explaining' was consistently more in mathematics classes as compared to language classes in all the 10 snapshots. In both mathematics and language, maximum percentage of classes were engaged in this activity during the second, third and fourth Snapshots in all the grades.

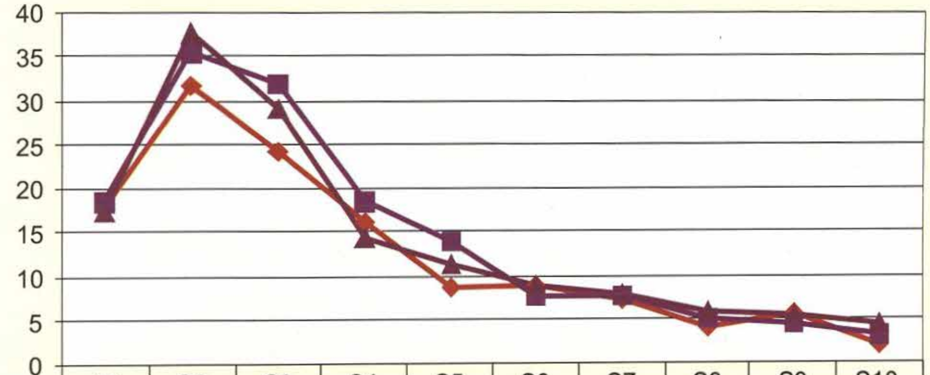
Fig 4.27: Temporal distribution of classes in respect of 'Writing on blackboard and explaining'



	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
Lang Gr II	10.7	19.5	20.0	18.5	16.6	15.6	15.8	14.1	10.5	9.0
Lang Gr IV	5.1	15.6	15.7	19.3	16.8	15.5	16.0	17.6	12.8	10.7
Lang Gr VI	9.7	22.6	18.8	20.8	21.2	13.7	13.3	17.6	10.4	10.8
Math Gr II	22.7	39.0	31.6	26.2	23.4	16.5	17.0	16.9	16.5	7.3
Math Gr IV	27.8	44.3	36.3	27.5	26.3	23.8	20.8	17.1	13.5	12.9
Math Gr VI	32.8	44.7	41.3	39.5	27.5	22.6	21.2	20.6	21.1	17.2

'Reading from the book' took more than 10% of teachers' time in language classes whereas it was much less in the case of mathematics classes. Hence, the distribution of this activity over 10 snapshots was studied only in the case of language classes. It is observed from Fig 4.28 that the highest percentage of classes in which teachers were engaged in this activity was observed in the second Snapshot. This percentage decreased consistently from third Snapshot onward. After 'reading from book', teachers switched on to other activities from fourth snapshot onward.

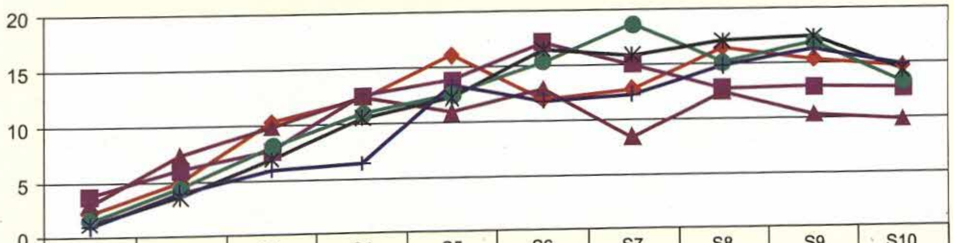
Fig. 4.28: Temporal distribution of classes in respect of 'reading from book'



	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
◆ Lang Gr II	17.8	31.7	24.2	16.0	8.6	8.8	7.2	4.0	5.6	2.1
■ Lang Gr IV	18.5	35.4	31.8	18.5	13.9	7.7	7.6	5.0	4.4	3.1
▲ Lang Gr VI	17.2	37.5	29.1	14.3	11.3	8.8	7.8	5.8	5.3	4.4

Percentage of classes where teachers observed and supervised activities of students' was the lowest (in 1% to 4% classes only) in 1st snapshot and it continued to increase upto fifth Snapshot (16.9%) in grade II language classes and upto sixth and seventh Snapshots in other classes (see Fig. 4.29).

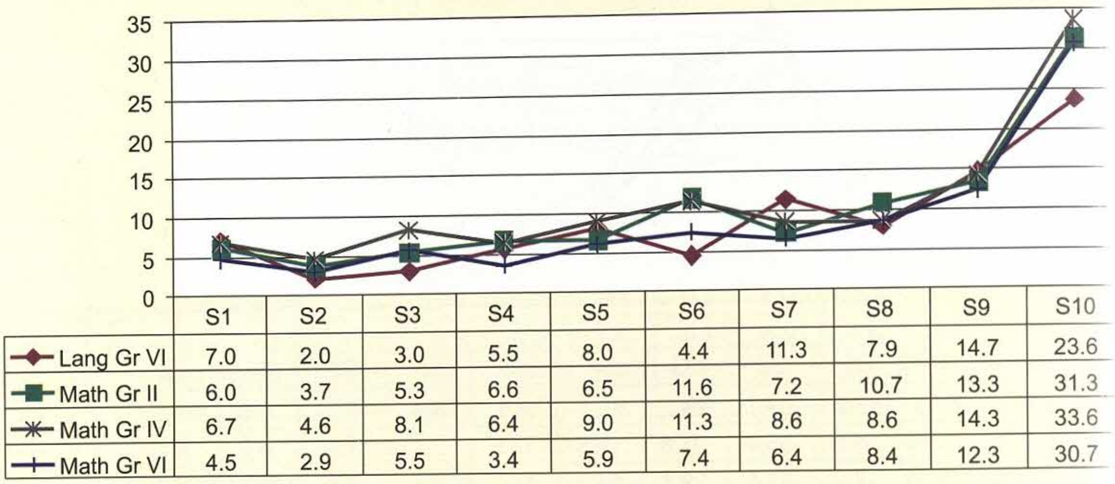
Fig 4.29: Temporal distribution of classes in respect of 'observing/ supervising activities of students'



	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
◆ Lang Gr II	2.1	4.8	10.3	12.3	16.0	11.9	12.7	16.4	15.4	14.7
■ Lang Gr IV	3.7	6.1	7.7	12.6	13.8	17.1	15.0	12.8	12.9	12.7
▲ Lang Gr VI	3.0	7.4	9.8	12.4	10.9	12.9	8.4	12.4	10.3	9.8
● Math Gr II	1.5	4.4	8.0	10.9	12.5	15.3	18.7	15.1	16.9	13.2
✱ Math Gr IV	1.2	3.5	6.8	10.5	12.2	16.5	15.9	17.0	17.4	14.4
+ Math Gr VI	1.0	4.0	6.0	6.4	13.3	11.9	12.3	14.8	16.3	14.8

'Giving home work or assignment' to students engaged teachers for more than 10% of time mostly in mathematics classes of all the three grades and language class of grade VI. Distribution of this activity across 10 Snapshots was studied only for these classes (see fig 4.30). It was found that maximum (about one third) mathematics classes had this activity in the tenth Snapshot. Thus, the last 3 minutes of the class were utilized for giving homework in most cases.

Fig 4.30: Temporal distribution of classes in respect of 'giving homework or assignment'



	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
Lang Gr VI	7.0	2.0	3.0	5.5	8.0	4.4	11.3	7.9	14.7	23.6
Math Gr II	6.0	3.7	5.3	6.6	6.5	11.6	7.2	10.7	13.3	31.3
Math Gr IV	6.7	4.6	8.1	6.4	9.0	11.3	8.6	8.6	14.3	33.6
Math Gr VI	4.5	2.9	5.5	3.4	5.9	7.4	6.4	8.4	12.3	30.7

4.10 Summary

(i) Teachers' activities in the classroom were classified into five broad categories. The first three activities considered to be important part of teaching learning are (1) 'Student centric activities' in which students are supposed to be more mentally involved, alert and active participants, (2) 'Teacher centric activities' in which teachers play dominant role and there is less interaction between teachers and students as a result students' initiative and mental processes are at a lower level, and (3) 'Supportive Instructional activities' are necessary but not explicitly part of teaching. The remaining two activities non-teaching ones are 'Class management' and 'Off-task'. The latter are such on which minimum time should be spent.

(ii) On the average, 83.8% of total cla[illegible]m time is spent on Student centric (2[illegible]%) and teacher centric (54.8%) activities[illegible]ss management' and 'Off task' respe[illegible]ly consumed 1.5% and 2.1% of teacher[illegible]e. Grade VI teachers spent marginally [illegible]re time (30.8%) on student centric act[illegible]es than grade II (27.6%) and grad[illegible]V (26.2%) teachers. Further, in all the [illegible]ee grades and in all the states except Har[illegible]na, time spent in language class on stu[illegible]ent centric activities is the lowest as compared to that in the class of other subjects. In Haryana, time spent on student centric activities was almost equal for language and mathematics classes but time spent on such activities in EVS/ Social Studies and science classes was more than that in language and mathematics classes.

(iii) Of the 5 activities that were of Student centric, time spent on 'asking questions', on the average, was about 14% of their total time in language and mathematics classes. This time was a little more (17%) in EVS/ Social Studies and science classes. Time spent on 'use of TLM/TLE' varied from 8.8% in mathematics classes to 12.8% in EVS and Social Studies classes with language being an exception (3.9%). Time spent on 'replying questions' varied from [illegible] in science to 3.2% in language. Time spent on 'project work/ creative activities' was below 1% of their total time.

(iv) There are 5 teachers' activities that were considered as teacher centric activities. These are (a) lecturing/ verbally explaining, (b) writing on blackboard and explaining, (c) reading from book, (d) giving dictation, and (e) observing / supervising students' activities. Of the total teachers' time in the class room, time spent on each one of the three activities namely, 'lecturing, writing on blackboard', 'reading from book' and observing/ supervising students' activities in language classes of grades II and IV varied from 11.4% to 18.3%. In grade VI language class, the position was a little different as the time spent on each of the aforesaid three activities by teachers varied from 14.2% to 20.8% of their total class room time. In the mathematics class of grades II and IV and EVS class of grade IV more than 20% of teachers' time was spent on 'writing on blackboard' and more than 10% time on 'lecturing' and also the same on 'observing and supervising students' activities. In grade VI, the activities consuming more than 20% of teachers' classroom time are 'writing on blackboard' in mathematics class and on 'lecturing' in social studies and science classes. Of the three Supportive Instructional activities (giving homework/assignments; correcting homework/test papers and encouraging students), maximum time (7% to 11%) was spent by teachers on 'giving homework/ assignments'.

(v) Time spent by male and female teachers in the classroom on different activities was almost the same across subjects and grades. The same position was observed in the case of para-teachers and regular teachers and also between mono and multi-grade classes.

(vi) Of the 17 teachers' activities in the language and mathematics class, teachers spent more than 5% of their time on seven academic activities, namely asking questions, demonstrating TLM/TLE, lecturing, writing on blackboard, reading from book, observing/supervising students activities and giving home work. Analysis was done to find out snapshot to snapshot variation for each of these activities of the teachers in classes of different subjects in grades II, IV and VI. In about 30% to 44% classes, 'lecturing' took place during the first snapshot and the incidence of this activity got reduced in the subsequent snapshots. 'Writing on blackboard' was observed to be the maximum during second and third snapshots. In these two snapshots, the percentage of classes having this activity was much more (31% to 45%) in mathematics classes than that in language classes (19% to 23%). So far as 'asking questions' is concerned, it occurred in the maximum number of language classes (13% to 23%) during 9th snapshot-almost at the fag end of the class whereas in mathematics classes, this activity was undertaken almost equally in all the 10 snapshots. In mathematics 'use of TLM/ TLE' was found to be more frequent (11% to 16% classes) during third snapshot and thereafter its incidence reduced with passage of time.

Chapter 5

STUDENTS TIME ON TASK IN CLASSROOMS

5.1 Categorization of Students' Activities

The main objective of the study was to find out what the students do in the classroom when the teacher is teaching. Like teachers' activities, students' activities in classrooms were also observed every three minutes in a 30 minute period and were recorded in the schedule Classroom Observation Sheet (TS-4). This schedule had provision for recording whether one stude[illegible] or a small/ medium/ large group of students [illegible] all students were engaged in a particular activit[illegible] a particular moment. The observations recor[illegible] in the form TS-4, were used for estimating th[illegible]e spent by students on different activities. [illegible]re were 19 activities listed in TS-4, which [illegible]re classified into 5 broad categories as follows:

Set 1: Active Learning Activities

Studying on their own	These are the activities of students in which the[illegible]s interaction with teacher and / or students are engage[illegible]n such learning tasks that require mental process of think[illegible]g, comprehending and analyzing information. This set ca[illegible]e considered as set of active learning activities.
Peer learning	
Answering questions	
Seeking clarification/ asking question	
Using TLM/ TLE	
Project work/ creative activity	
Doing assignment	

Set 2: Passive Learning Activities

Listening attentively to teacher	In these activities there is no interaction of students [illegible] teachers and students simply listen or observe. This set [illegible] be considered as set of passive learning activities.
Taking dictation	

Set 3: Mechanical Learning Tasks

Reading aloud to class/ alone	These are the activities in which students carry out t[illegible] mechanically without much mental process of think[illegible] and comprehending.
Copying	
Rote Memorization	

Set 4: Class Management

Waiting for teachers' attention	Class management activities are those in which students are not involved in any learning task but are directly or indirectly helping in management of the class.
Being reprimanded	
Assisting in classroom management	

Set 5: Off-task

Being un-attentive	These activities are neither for students' learning nor for class management; these hamper learning or cause distraction but these do sometimes take place in classrooms.
Cross talking with others	
Engaged in disruptive activities	
Entering into or going out of class	

More details of each activity are given in Annex B.

5.2 Estimation of Time Spent on Different Activities

In order to estimate the percentage of time spent by students on different activities, it was necessary to count the number of students participating in a particular activity at a given moment, that is, when a snapshot observation is recorded. As it was not possible to determine the exact number of students participating in any activity in the snapshot, the observations were recorded in the form of codes as follows.

	Participation of students by	Code
(a)	[illegible] one student	1
(b)	[illegible] 5 students (small group)	S
(c)	[illegible] 10 students (medium group)	M
(d)	[illegible] the number of students in the [illegible] minus 1 (large group)	L
(e)	[illegible] students (whole class)	A

[illegible] estimating the number of students participating in any activity at a particular moment in a class of n students, the codes 1, S, M and A were replaced with numbers 1, 3.5, 8 and [illegible] respectively. The number that replaces L depends on the value of n, i.e. the number of students present in the class. If n ≤10, it is not possible for any L to be marked and hence the value of L will be 0. When n>10, it is sometimes possible that L is marked twice, for example, when n = 30, one large group of 12 students is engaged in Activity x and another large group of 15 students is engaged in Activity. In such cases, count the number of times I, S, M and L occur. Suppose they occur k_1, k_S, k_M and k_L times respectively in a snapshot, then the estimated number of students accounted for by I, S and M is $1 \times k_I + 3.5 \times k_S + 8 \times k_M$. Then the number that should replace L is

$$\{n- (k_1 + 3.5 \times k_s + 8\times k_M)\} / k_L$$

If the value of L is found to be <10, the data requires checking as there is likely to be some error in marking the symbols I, S, M, etc.

Example 1. Suppose in a class of 38 students, in a snapshot I occurs 3 times, S occurs 2 times and M only once and L also once, then the numerical value of L will be

$$\{38 - (1\times 3+3.5\times 2+1\times 8)\}/1 = 38 - 21.5 \simeq 16.$$

Since computed value of L (16) is greater than 10, the L is replaced by 16.

Example 2. Suppose in a class of 45 students in a snapshot, I occurs twice, S occurs 4 times, M twice and L twice. Then the value of L will be

$$\{45 - (1 \times 2 + 3.5 \times 4 + 8 \times 2)\}/2 = (45\text{-}32)/2 = 6.5$$

Here, since the value of L (6.5) is <10, the data required checking since L cannot be <10.

If the student-time for any activity is aggregated over all the snapshots of all the classes of a particular grade and subject in the sampled schools, it gives an estimate of student-time for that activity for that grade and subject. This can be expressed as percentage of total teaching time for that subject in that grade. In the following sections, we shall present the findings on percentage of student-time spent on different sets of activities as well as on individual activities in different subjects in grades II, IV, and VI in each state and also for the aggregate of all the five states covered in the study.

5.3 Time Spent on Different Types of Activities (Overall for 5 States)

Let us first discuss the student-time spent on different sets of activities for the total of all five states. Table 5.1 shows the percentage of time spent on the five types of activities in different grades derived after pooling up the data of different subjects in each grade and the data of all the five states in which this study was conducted.

On the basis of percentages derived from such pooled up data, it is found that the time spent on Set 2 activities of passive learning is much more than the time spent on Set 1 (active learning) activities. About 47% total class period is spent on this set of activities which comprises largely "listening to the teacher's talk" in the class. Set 3 activities (mechanical type tasks) consume about 15% of student time. More time on such activities is spent in classes II and IV and much less in class VI. On class management, only about 5 percent of students' time is spent, which is not much. The time spent on Off-task activities is comparatively more (about 8%). The possibility of the observer's presence in the class resulting in reduction of the Off-task time of students cannot be ruled out.

Table 5.1: Distribution of students' time on different types of activities in different grades (aggregated over subjects)

Activity type	Grade II	Grade IV	Grade VI	Pooled
Set 1 : Active Learning	26.4	25.7	22.0	24.7
Set 2: Passive Learning	41.2	45.8	53.7	46.9
Set 3: Mechanical Tasks	18.5	15.2	12.7	15.4
Set 4: Class management	4.8	5.0	5.3	5.1
Set 5: Off-task	9.1	8.2	6.3	7.8
Total	**100.0**	**99.9**	**100.0**	**100.0**

Let us now see how the time spent on different types of learning activities differ across grades. Table 5.1 shows the distribution of student-time spent on different types of learning activities in grades II, IV and VI, derived from the data aggregated over subjects in each grade.

The main findings are as follows:

(i) Students' time spent on Set 1 activities (Active learning) gradually declines from 26.4% in grade II to 22.0% in grade VI.

(ii) Students' time spent on Set 2 activities (Passive learning) increases gradually from 41.2% in grade II to 45.8% in grade IV and further to 53.7% in grade VI. Apparently, there is much more passive learning in upper grades where there is more of 'talk and chalk' method in teaching.

(iii) Students' time spent on Set 3 (mechanical type learning) activities decreases from 18.5% in grade II to 12.7% in grade VI.

(iv) Students' time spent on 'class management' activities increases marginally from 4.8% in grade II to 5.3% in grade VI.

(v) Off-task activities of students take maximum time in grade II (9.1%) which decreases gradually to 6.3% in grade VI.

5.4 Difference in Pattern of Activities Across Subjects and Grades

Let us compare the percentage of students' time spent on different types of activities in different subjects in each grade as well as overall for all the three grades.

Table 5.2: Percentage distribution of students' time spent on different types of activities in different subjects and grades averaged over 5 states

Activity type	Language				Mathematics				EVS	SS	Science
	Gr. II	Gr. IV	Gr. VI	Average	Gr. II	Gr. IV	Gr. VI	Average	Gr. IV	Grade VI	
Set 1-Active learning	21.8	22.5	19.8	21.6	30.9	29.9	26.3	29.5	24.5	21.6	20.2
Set 2-Passive learning	44.5	48.4	56.9	48.8	37.9	39.6	47.4	40.7	49.6	55.0	55.5
Set 3- Mechanical tasks	20.2	16.1	12.8	16.9	16.8	16.7	16.0	16.6	12.9	11.4	10.6
Set 4-Class management	3.9	4.5	4.6	4.3	5.8	5.6	4.8	5.5	5.0	5.7	6.2
Set 5- Off-task	9.7	8.4	5.9	8.3	8.6	8.2	5.5	7.7	8.1	6.3	7.5

The following are the main inferences derived from the above table:

(i) Overall, the percentage of students' time spent on Set 1 activities (Active learning) s much more in mathematics compared to nguage. However, there is some variation ross grades; in grade II and IV a little ore time is spent on Set 1 activities in th language and mathematics compared grade VI. In grades IV & VI, time spent Set 1 activities in mathematics is much ore than that spent on language EVS/ cial Studies and science.

(ii) udents spend more time on Set 2 tivities (Passive learning) in language an in mathematics in every grade. udents' time spent on Set 2 activities in ade VI is much more than that spent in ades II and grade IV in both language d mathematics. There is more of passive rning in grade VI than in lower grades.

(iii) udents' time spent on Set 3 activities is ximum (20.2%) in grade II in language. mathematics it is almost same in all the des (about 17%). It is much more in mathematics than in language, science or Social Studies in grade VI. Apparently routine activities of rote learning, copying and doing written work become more prevalent in mathematics than in other subjects in grade VI

(iv) Student-time spent on 'class management' activities is in the range of 3.9% to 6.2%. It is slightly less in language classes compared to other subjects.

(v) Off-task time is almost same (between 8.1% and 9.7%) in all the subjects in grades II and IV but it is less (about 6%) in every subject in grade VI. In language, however, off-task time is slightly more than that in mathematics in all the grades.

5.5 Student-Time Spent on Different Types of Activities in the Class in Five States

The following table shows comparison of states on the distribution of student-time spent on different types of activities. In this table, the percentages are obtaining by aggregating over grades and subjects in order to highlight the differences between states.

Tabl 3: Distribution of students time spent on different types of learning, class management and off-task activities across states (aggregated over subjects and grades)

Activity type	Assam	Haryana	Karnataka	Maharashtra	Orissa
Set 1: Learning activity	24.8	20.7	25.4	22.8	33.2
Set 2: Learning activity	50.8	45.8	47.0	52.8	39.2
Set 3: Learning activity	15.1	20.4	12.2	11.6	14.1
Set 4: Class management	2.4	6.5	5.0	5.6	4.5
Set 5: Off-task	6.9	6.5	10.4	7.1	9.0
Total	**100.0**	**99.9**	**100.0**	**99.9**	**100.0**

We find that there is significant difference between states but the broad pattern is similar. In particular, Haryana and Orissa are quite different from the other 3 states (Assam, Karnataka and Maharashtra) which are more akin to one another. The main conclusions based on the above table are given below:

(i) Overall, students' time spent on learning activities of Set 1 (Active learning) is about 25% of total student-time. However, there is considerable variation across states; it is least (20.7%) in Haryana and quite high

(33.2%) in Orissa whereas it is between 22.8% and 25.4% in the other 3 states.

(ii) Maximum student-time (39% to 53%) is spent on activities of Set 2 (passive learning). It is highest (52.8%) in Maharashtra and lowest (39.2%) in Orissa.

(iii) On learning activities of Set 3, while the average student-time is 15.4% of total student-time, it is highest (20.4%) in Haryana and lowest (11.6%) in Maharashtra.

(iv) Overall, the time of students spent on class management is about 5%. It is lowest (2.4%) in Assam and highest (6.5%) in Haryana.

(v) The average time when students are off-task is 7.8% of total student-time. It is least (6.5%) in Haryana and highest (10.4%) in Karnataka.

5.6 Student-Time Spent on Different Types of Activities in Different Grades in Five States

Table 5.4 shows the percentage of students' time spent on Active learning, Passive learning, Mechanical tasks, Class management and Off-task activities in classes II, IV and VI in different states. In this case the data of the different subjects has been pooled in each class to highlight the grade to grade variation in respect of time spent on different sets of activities.

Table 5.4: Percentage of students' time spent on different categories of activities in grades II, IV and VI when subjects are pooled

State	Activity Set	Grade II	Grade IV	Grade VI
Assam	Active learning	24.5	26.6	23.9
	Passive learning	46.9	50.7	52.5
	Mechanical tasks	16.6	14.8	14.7
	Class management	2.9	2.2	2.2
	Off-task	9.1	5.7	6.7
Haryana	Active learning	23.0	22.5	14.5
	Passive learning	35.5	44.0	61.9
	Mechanical tasks	26.9	20.2	12.5
	Class management	6.6	6.0	7.3
	Off-task	8.0	7.3	3.8
Karnataka	Active learning	28.9	24.9	23.7
	Passive learning	41.8	46.8	50.2
	Mechanical tasks	13.7	12.2	11.4
	Class management	3.6	5.4	5.6
	Off-task	12.1	10.7	9.1
Maharashtra	Active learning	23.7	24.6	16.7
	Passive learning	51.5	50.7	59.9
	Mechanical tasks	12.2	11.1	11.5
	Class management	4.9	5.7	6.5
	Off-task	7.7	7.9	5.4
Orissa	Active learning	27.9	31.2	31.7
	Passive learning	45.9	41.3	43.3
	Mechanical tasks	15.2	15.4	12.6
	Class management	2.7	3.7	5.5
	Off-task	8.4	8.3	7.0

The main conclusions that we derive from this table are as follows:

(i) Time Spent on Set 1 Activities (Active Learning)

In general, the student-time spent on tive leaning' is close to 25% in all grades Assam; in Haryana and Maharashtra, it lmost same (about 25%) in grades II IV, but declines substantially (14% 17%) in grade VI; in Karnataka, it is hest (29%) in grade II but declines about 24% in grade IV. In Orissa, the e spent on Active Learning is relatively ch higher compared to other states in the grades and particularly grades IV VI in which it is over 31%. In grade the variation across states in respect of e spent on Active Learning activities is ticularly large; it varies between 14.5% Haryana and 31.7% in Orissa.

(ii) ime Spent on Set 2 Activities ssive Learning)

ne spent on Set 2 activities is close 50% of total time in all the grades in am, in grades IV and VI in Karnataka in grades II and IV in Maharashtra. Haryana and Maharashtra, time spent passive learning activities is maximum % to 62%) in grade VI and in Orissa, it inimum (only about 43%). In Haryana, Karnataka and Orissa, the time spent on passive learning in grades II and IV is relatively much less (below 47%), the least being in grade II of Haryana (only 35.5% of total time).

(iii) Time Spent on Set 3 Activities (Mechanical Tasks)

There is considerable variation in respect of time spent on mechanical type learning activities across states but not much between grades within any state. In every grade, the time spent on this set of activities is about 15% in Assam and Orissa and about 12% in Karnataka and Maharashtra, but in Haryana, there is distinct trend of sharp decline in percentage of time spent on this set of activities, where it is 26.9% in grade II, 20.0% in grade IV and 12.5% in grade VI. In general, it is less in grade VI than in other grades in all the states. In lower grades, students have to spend more time on rote learning and drill type activities but not in higher grades.

(iv) Time Spent on Class Management Activities

The time spent on such activities is between 2% and 7% in all the grades in every state. It is least (between 2% and 3%) in every grade in Assam; between 6% and 7% in Haryana and between 3% and 6% in Karnataka. Only in Maharashtra and Orissa between 11% and 15% time is spent on such activities in different grades, the highest percentage being in grades II and IV (about 15%) in Orissa.

(v) Time Spent on Off-task Activities

In general, the percentage of student-time spent on such activities is more in grade II and less in grades IV and VI in every state. But state to state variations are significant. In Assam, the time spent or rather wasted on such activities declines from 9.1% in grade II to 6.7% in grade VI; in Haryana, from 8.0% in grade II to 3.8% in grade VI; in Karnataka, from 12.1% in grade II to 9.1% in grade VI; in Maharashtra, from 7.7% in grade II to 5.4% in grade VI and in Orissa, from 8.4% in grade II to 7.0% in grade VI. Only in Karnataka, the off-task time of students is much more than that in other states in every grade.

5.7 Distribution of Student-Time on Different Sets of Activities in Different Subjects of Grades II, IV and VI in Five States

Table 5.5 shows the percentage distribution of students' time spent on the activities of five sets in language, mathematics classes of grades II, IV and VI; in EVS class of grade IV and in science and Social Studies class of grade VI in each one of the five states. In this table variation across subjects and across grades can be seen for every state.

(i) Time Spent on Set 1 Activities (Active Learning)

In the language class, the time spent on Set1 (Active learning) is highest (30.9%) in gradeVI in Orissa and lowest (12.9%) in grade VI in Haryana. In all other language classes, it is between 15% and 28%.

In each grade in every state much more time is spent on Set 1 (Active Learning) activities in mathematics than in language. In mathematics, students spent more time on 'doing assignments' which is a part of Active Learning set of activities. In Orissa much more time is spent of Active learning in mathematics (between 35% and 40%) in all the three grades whereas it is less than 31% in other states, except in Karnataka where 36.4% time is spent on Active Learning in Mathematics class of grade II. The minimum time

Table 5.5: Students' time spent on different categories of activities in different states

State	Activity	Language				Mathematics				EVS/SS			Science
		Grade II	Grade IV	Grade VI	Avg -erage	Grade II	Grade IV	Grade VI	Avg-erage	Grade IV	Grade VI	Avg-erage	Grade VI
Assam	Active learning	20.4	23.4	20.8	21.6	28.7	31.2	30.1	30.0	25.3	22.9	24.0	[illegible]
	Passive learning	52.8	53.8	54.6	53.8	40.8	45.3	44.3	43.5	53.1	54.6	53.9	[illegible]
	Mechanical tasks	15.8	14.7	16.8	15.8	17.4	16.8	19.3	17.9	12.9	13.3	13.1	[illegible]
	Class management	1.6	2.1	1.6	1.8	4.2	1.7	1.5	2.4	2.8	2.4	2.6	[illegible]
	Off-task	9.4	6.0	6.2	7.1	8.9	5.1	4.8	6.1	5.9	6.6	6.3	[illegible]
Haryana	Active learning	17.5	20.2	12.9	17.8	28.3	27.7	16.7	26.0	19.2	14.9	17.9	[illegible]
	Passive learning	40.1	45.6	69.2	47.3	31.1	34.9	54.2	36.6	52.1	62.8	55.5	[illegible]
	Mechanical tasks	29.2	20.7	11.2	22.8	24.7	23.2	16.5	22.7	16.5	9.2	14.2	[illegible]
	Class management	4.3	4.9	3.8	4.4	8.7	7.1	8.5	8.0	6.0	8.8	6.9	[illegible]
	Off-task	8.8	8.6	2.8	7.7	7.2	7.2	4.0	6.6	6.1	4.3	5.5	[illegible]
Karnataka	Active learning	21.3	21.0	20.1	20.9	36.4	28.5	28.6	31.3	25.1	21.6	23.7	[illegible]
	Passive learning	43.7	48.4	50.8	47.4	39.8	45.3	45.9	43.5	46.8	54.9	50.1	[illegible]
	Mechanical tasks	18.7	14.8	14.8	16.2	8.7	10.4	14.5	10.9	11.2	8.8	10.2	[illegible]
	Class management	3.7	6.4	5.8	5.3	3.5	4.4	3.4	3.8	5.3	5.5	5.4	[illegible]
	Off-task	12.6	9.3	8.5	10.2	11.6	11.4	7.7	10.5	11.5	9.2	10.6	11.3
Maharashtra	Active learning	20.8	21.5	15.3	20.1	26.6	29.4	18.4	26.5	23.0	19.3	22.0	13.9
	Passive learning	53.8	53.1	61.7	54.8	49.2	44.7	55.8	48.4	54.4	58.1	55.4	63.7
	Mechanical tasks	12.7	11.9	10.2	11.9	11.8	12.3	14.4	12.4	9.1	10.8	9.6	10.8
	Class management	5.3	5.1	7.4	5.6	4.6	5.7	6.0	5.3	6.2	6.5	6.3	6.0
	Off-task	7.5	8.5	5.5	7.6	7.9	7.9	5.3	7.5	7.4	5.3	6.8	5.5
Orissa	Active learning	20.7	27.7	30.9	30.8	39.4	35.3	38.4	37.5	34.2	30.0	32.6	27.6
	Passive learning	53.8	46.8	46.4	41.6	33.3	32.6	36.7	33.8	39.0	43.3	40.7	46.7
	Mechanical tasks	16.3	16.3	9.8	14.4	13.4	16.1	13.8	14.6	13.1	14.7	13.7	12.0
	Class management	1.6	2.6	5.8	3.7	4.4	6.4	4.5	5.2	3.1	5.3	3.9	6.2
	Off-task	7.6	6.6	7.2	9.6	9.5	9.6	6.5	8.8	10.6	6.6	9.1	7.5

spent on Active Learning activities in mathematics is in grade VI of Maharashtra (18.4%) whereas it is more than 25% in mathematics class of every grade in every state.

In EVS class of grade IV, maximum time is spent on Active learning in Orissa (34.2%) and minimum in Haryana (19.2%). In other states, it is between 23% and 25%.

In Social Studies and science classes of grade VI, relatively more time is spent on Active Learning in Orissa (28% to 30%) whereas the minimum time is spent on it in Haryana (13% to 15%).

(ii) Time Spent on Set 2 Activities (Passive learning)

Over 50% time is spent on this set of activities in language classes of every grade in Assam and Maharashtra. In other states also it is over 40% in every language class. Maximum time (over 60%) was spent on Set 1 activities in language class of grade VI in Haryana and Maharashtra; in Haryana, it was as high as 69.2%.

In Mathematics class, the time spent in passive learning activities was between 40% and 50% in most of the classes, except in Orissa where it was less than 37% in every grade and in Haryana, where it was less than 35% in grades II and IV. The time spent on passive learning in Mathematics was over 50% only in grade VI of Haryana and Maharashtra, the highest being 55.8% in grade VI of Maharashtra.

In EVS class of grade IV, 53% to 55% student time was spent on passive learning activities in Assam, Haryana, Maharashtra and Orissa, it was least (only 33.8%).

In social science class of grade VI, 55% to 63% time was spent on passive learning in all the states except Orissa where it was only 43%. In science class also of grade VI, 56% to 64% time was spent on Passive learning in Assam, Haryana and Maharashtra and between 46% and 49% in the other two states.

(iii) Time spent on Set 3 Activities (Mechanical tasks)

The students' time spent on Set 3 activities was between 15% and 20% in all language and mathematics classes in Assam. In EVS class of grade IV and social science and science classes of grade VI, it was less, about 13%. In Haryana, students' time spent on Set 3 activities was maximum (29.2%) in language class of grade II. Also in Haryana, the time spent on Set 3 actitivities was more than that of other states. Further, in Haryana, time spent on such activities was much less in grade VI compared to grades II and IV. In Karnataka, students' time spent on Set 3 activities was more (15% to 19%) in language classes in all the grades but was much less (9% to 15%) in the classes of mathematics and other subjects.

In Maharashtra, time spent on Set 3 activities was less than that of other states in almost every class. It was between 9% and 13% in all classes except mathematics class of grade VI in which it was 14.4%. In Orissa, time spent on Set 3 activities was between 13% and 16% in every subject in each grade except in language class of grade VI in which it was as low as 9.8%.

(iv) Time Spent on Set 4 Activities (Class Management)

Generally students are not much involved in class management activities in any state. In Assam, the time of students spent on class management tasks is least, only between 2% and 4%. In Haryana, it is much more, between 4% and 5% in language classes, between 7% and 9% in mathematics classes, 6% in EVS class of grade IV and about 8% in social science and science classes of grade VI. In Karnataka, the percentage of students' time spent on this activity is between 3% and 6% in every class except in science class of grade VI, in which it is 7.6%. In Maharashtra, the students devote 5% to 7% time in most of their classes irrespective of subject in every grade. In Orissa, the percentage of time spent on class management activities is below 3% in language and EVS classes except in language class of grade VI in which it is 5.8%. Only in mathematics class of grade IV and science class of grades VI, it is a little more than 6%; it is below 6% in all other classes.

(v) Time on Set 5 (Off task activities)

The total time when students were found to be off-task, that is, not involved in any learning activity in the class, was less than 10% in every class in every state except Karnataka where it was between 10% and 13% in most of the classes. It is slightly less in grade VI compared to grades II and IV in which younger children sit. There is [illegible]ot much subject to subject variation in [illegible]is respect in any grade.

5.8 Distribution of Students' Tim[illegible] [illegible]n Individual Learning Activitie[illegible] [illegible]n Language and Mathematics Cl[illegible]s of Different Grades (Overall f[illegible] 5 States)

Table 5.6 shows the percentage of studen[illegible]ne spent on each one of the 19 student-activi[illegible] in grades II, IV and VI, aggregated over subj[illegible] as well as for the aggregate of all grades bas[illegible] on

Table 5.6: Percentage of students' time spent on individual activities – grade wise - all states

Activity type	Activities	Grade II	Grade IV	Grade VI	[illegible]
Active Learning	Studying On Own	5.3	4.9	3.9	4[illegible]
	Peer Learning	1.9	1.8	1.7	[illegible]
	Answering Question	6	6.5	6	[illegible]
	Seeking Clarification/ asking question	1.6	1.6	1.3	[illegible]
	Using TLE/TLM	2.4	2.3	2.4	[illegible]
	Project Work	0.8	1	1.1	[illegible]
	Doing Assignment	8.3	7.5	5.7	[illegible]
	Total	**26.4**	**25.7**	**22**	2[illegible]
Passive Learning	Listening / Observing	38.3	43.9	51.7	4[illegible]
	Taking Dictation	2.9	2	2	[illegible]
	Total	**41.2**	**45.8**	**53.7**	4[illegible]
Mechanical Tasks	Reading Aloud	4.7	3.1	1.4	[illegible]
	Copying Writing Given Work	12.9	11.5	10.9	11[illegible]
	Rote Memorisation	0.9	0.6	0.4	0.[illegible]
	Total	**18.5**	**15.2**	**12.7**	**15.[illegible]**
Class Management	Waiting	3.9	4.2	4.2	4.1
	Being Reprimanded	0.1	0.1	0.2	0.1
	Class Management	0.8	0.8	1	0.8
	Total	**4.8**	**5**	**5.3**	**5.1**
Off – Task	Un-attentive	5.3	5	4	4.8
	Cross Talking	2.9	2.4	1.7	2.4
	Disruptive Acts	0.6	0.6	0.5	0.6
	Entering / Going Out Of Class	0.3	0.2	0.1	0.2
	Total	**9.1**	**8.2**	**6.3**	**7.9**

the average of all the five states. Table 5.7 shows similar percentage distribution of student time separately for each subject in each grade. These tables show the specific activities on which students spend more time and the activities on which they spend less time or very little time.

From the above table, we arrive at the following conclusions.

(i) In every class, maximum time (45%) is spent on **listening to the teacher or observing attentively what the teacher is demonstrating or doing.** The time spent on this activity is more in language classes in all the grades compared to mathematics classes. The next highest share of time goes to 'copying' on which overall about 12% time of students is spent.

(ii) Time spent on **'listening/ observing'** activity increases gradually from grade II to grade VI in both subjects. In language, it increases from 41.6% in grade II to 55% in grade VI; in mathematics it increases form 35.0% in grade II to 44.8% in grade VI. In EVS it is 48.1% in grade IV and is 53.0% in grade VI.

Table 5.7 Percentage of students' time spent on individual activities in different subjects of grades II, IV and VI (aggregate of all states

Activity type	Activity	Language			Mathematics			EVS		Science
		Grade II	Grade IV	Grade VI	Grade II	Grade IV	Grade VI	Grade IV	Grade VI	Grade VI
Set 1 Active learning	Studying on their own	5.0	5.9	5.8	5.6	5.0	3.3	3.6	3.3	3.1
	Peer Learning	1.7	1.5	1.0	2.1	2.2	2.2	1.8	1.6	1.9
	Answering questions	6.2	6.0	5.6	5.7	5.7	5.9	7.8	5.7	6.8
	Seeking clarification/ asking questions	1.3	1.4	1.3	1.8	2.1	1.3	1.4	1.5	1.0
	Using TLE/ TLM	1.8	1.6	1.3	3.1	2.7	2.2	2.7	3.4	2.6
	Project work/ creative activity	0.6	0.9	0.5	1.0	1.2	1.7	1.0	1.3	0.8
	Doing assignments	5.2	5.3	4.3	11.5	11.0	9.7	6.2	4.8	4.1
	Total (Set I)	**21.8**	**22.5**	**19.8**	**30.9**	**29.9**	**26.3**	**24.5**	**21.6**	**20.2**
Set 2 Passive learning	Listening /observing attentively	41.6	46.4	55.0	35.0	37.2	44.8	48.1	53.0	54.1
	Taking dictation	2.9	2.0	1.9	2.9	2.4	2.6	1.5	2.0	1.4
	Total (Set II)	**44.5**	**48.4**	**56.9**	**37.9**	**39.6**	**47.4**	**49.6**	**55.0**	**55.5**
Set 3 Mechanical tasks	Reading aloud	7.7	5.5	3.1	1.6	1.0	0.5	2.6	0.6	1.3
	Copying/ writing orally given work	11.3	9.9	9.3	14.6	15.1	15.1	9.6	10.5	8.6
	Rote memorization	1.1	0.6	0.4	0.7	0.6	0.4	0.7	0.2	0.6
	Total (Set III)	**20.2**	**16.1**	**12.8**	**16.8**	**16.7**	**16.0**	**12.9**	**11.4**	**10.6**
Set 4 Class management	Waiting	3.2	3.5	3.4	4.7	4.7	3.9	4.3	4.7	4.8
	Being reprimanded	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2
	Class management	0.6	0.9	1.0	1.1	0.8	0.8	0.6	0.9	1.2
	Total (Set IV)	**3.9**	**4.5**	**4.6**	**5.8**	**5.6**	**4.8**	**5.0**	**5.7**	**6.2**
Set 5 Off-task	Un-attentive	5.7	5.2	3.8	5.0	4.9	3.0	4.9	4.2	4.9
	Cross talking	3.1	2.5	1.6	2.8	2.4	1.9	2.4	1.6	1.9
	Disruptive acts	0.6	0.6	0.4	0.5	0.7	0.5	0.6	0.6	0.6
	Entering/ going out	0.3	0.1	0.1	0.2	0.2	0.1	0.2	0.1	0.1
	Total (Set V)	**9.7**	**8.4**	**5.9**	**8.6**	**8.2**	**5.5**	**8.1**	**6.3**	**7.5**

(iii) Much more time is spent on **doing assignments** in mathematics class than in language class in all the grades. Overall, it is about 11% in mathematics and only 5% in language and between 4% and 6% in other subjects of grades IV and VI.

(iv) Students study on their own when the teacher is absent and sometimes even when he/ she is present. The average time when **students study on their own** is between 3.1% and 5.9% of total student time. It is slightly less in mathematics than in language class; it is particularly less (between 3% and 4%) in all subjects of grade VI except language in which it is 5.8%.

(v) About 6 % Students' time is spent on **answering questions** asked by the teacher. There is hardly any variation between subjects or across grades in this respect. However, it is about 8% in EVS classes of grade IV and about 7% in science classes of grade VI.

(vi) Students' time spent on each one of the following activities is less than 3% with hardly any variation across grades or subjects.

- Taking dictation: 2 to 3%.
- Peer learning/working in small groups: 1 to 2.4%
- Seeking clarification: 1.3 to 2% (It is a little more in mathematics than in language)
- Using TLM/ TLE: 1.3 to 3.4 %.
- Project work/ creative activity: 0.5% to 1.7%
- Rote memorization: 0.4to1.1%

Peer learning and Project work are not at all common in schools. Use of TLM is also not common though teachers get grant for developing TLM and are encouraged to use TLM in teaching. Surprisingly very little time was used by students on rote memorization though the general perception is that this is quite common in primary classes. Perhaps the teachers became conscious of the presence of investigators and thought rote memorization by students would not be considered a proper teaching activity.

(vii) Students' time spent on **reading aloud** is more in language class in all the grades except grade VI. It is particularly substantial in grade II (11.2%) language class. In mathematics, there is hardly any 'reading aloud' activity. In grade IV, EVS class also there is some reading aloud (5.5%).

(viii) Students' time spent on **copying from book or blackboard** is more in mathematics than in language in each grade. It is least (less than 10%) in EVS class of grade IV and also in all subjects of grade VI except mathematics.

(ix) Students spend more time **waiting for their turn to speak or to get teacher's attention** in mathematics classes in all the grades and in Social Science and science classes in grade VI.

5.9 Percentage of Students' Time Spent on Different Types of Activities in Mono-Grade and Multi-Grade Classes (overall)

Some of the classes that were observed in this study were mono-grade and some were multi-grade. In mono-grade classes students of only a single grade sit together while in multi-grade classes students of two or more grades are taught together by the teacher. In this study, attempt was made to find out whether the pattern of time-on-task of students differs in the two situations.

As Table 1.4 in Chapter 1 shows, the percentage of multi-grade classes varied considerably across states, from 27.3% in grade

II in Haryana to 63.0% in the same grade in Karnataka. Almost the same was the situation in grade IV, but in grade VI there were relatively very few multi-grade classes. Comparison of mono-grade with multi-grade classes in respect of students' time-on-task is, therefore, being made for grades II and IV only. Table 5.8 shows the percentage of time spent by students on different activities in mono-grade and multi-grade classes of language and mathematics in grades II and IV for the aggregate of all five states.

T .8: Percentage of time spent by students on different activities in multi-grade and mono-grade classes for total of all states (overall)

Activity	Language				Mathematics				EVS	
	Grade II		Grade IV		Grade II		Grade IV		Grade IV	
	Mono	Multi	Mono	Multi	Mono	Multi	Mono	Multi	Mono	Multi
1- e learning										
St g on their own	4.1	6.9	4.8	8.4	4.6	7.9	3.7	8.9	3.1	4.9
P rning/ working in s oups	1.8	1.6	1.4	1.6	2.3	1.9	2.1	2.5	1.5	2.5
A ing questions	6.8	4.8	6.3	5.3	6.0	5.1	5.5	6.4	7.8	7.7
Se g clarification	1.4	1.1	1.5	1.1	1.8	1.8	2.2	1.8	1.5	1.2
U TLE/ TLM	2.1	1.2	1.7	1.5	3.2	2.8	2.9	2.4	2.9	2.0
Pr work/ creative activity	0.7	0.5	0.8	1.1	1.2	0.6	1.4	0.6	0.8	1.7
D assignments	4.7	6.1	4.5	7.1	11.2	12.1	11.2	10.4	5.5	7.9
T Set I)	21.6	22.2	21.0	26.0	30.3	32.2	28.9	33.0	23.2	27.9
2- ve learning										
L ng /observing at ely	43.2	38.2	48.1	42.6	36.3	32.1	37.5	36.3	48.7	46.5
T dictation	2.8	3.1	2.3	1.5	3.4	2.0	2.9	1.1	1.6	1.1
T Set II)	46.0	41.3	50.4	44.1	39.7	34.1	40.4	37.4	50.3	47.7
3- hanical tasks										
R g aloud	8.2	6.8	5.4	5.9	1.4	2.0	1.1	0.8	2.7	2.4
C g/ writing orally given w	10.2	13.7	9.7	10.4	13.9	16.0	15.6	13.6	9.4	9.9
R nemorization	1.0	1.2	0.8	0.2	0.7	0.6	0.6	0.5	0.9	0.2
To (Set III)	19.4	21.6	15.9	16.5	16.0	18.6	17.3	14.9	13.0	12.5
4-Class management										
Waiting	2.9	3.6	3.9	2.7	4.8	4.3	4.6	5.1	4.9	2.5
being reprimanded	0.1	0.3	0.1	0.1	0.1	0.0	0.1	0.2	0.1	0.2
class management	0.6	0.6	0.8	1.2	1.1	1.0	0.7	0.9	0.6	0.7
Set Total	3.6	4.4	4.8	4.0	6.0	5.3	5.4	6.2	5.6	3.3
5- Off-task										
Un-attentive	5.5	6.1	5.2	5.0	4.7	5.6	4.7	5.6	4.7	5.2
Cross talking	2.9	3.5	2.1	3.5	2.6	3.2	2.5	2.1	2.3	2.7
disruptive acts	0.6	0.5	0.6	0.6	0.6	0.4	0.7	0.6	0.7	0.4
entering/ going out	0.3	0.2	0.1	0.2	0.1	0.6	0.2	0.3	0.2	0.2
Set Total	9.3	10.4	8.0	9.4	8.0	9.7	8.1	8.5	7.9	8.5

We find that students' time spent on Set 1 activities of Active learning is more in multi-grade classes in both grades II and IV. In grade IV, the difference between the two is more pronounced. The difference is mainly because more students study on their own (which is categorized as an Active learning activity) or spend their time on doing assignments in a multi-grade class, since the teacher addresses students of only one grade at a time leaving the students of the other grade(s) free to study on their own or to do some given assignment.

In a multi-grade class, students spend much less time on Passive learning activity of'listening/ observing what the teacher does' compared to mono-grade class. This is so because in a multi-grade class students of the grade, which is not being addressed by the teacher, do not listen to him/ her but work on their own.

In respect of mechanical tasks, students of multi-grade classes of grades II spend slightly more time on 'copying/ writing some orally given work' than the students of mono-grade classes. In other grades not much difference between the two was found. In respect of students' time spent on 'class management' activities, there was not much difference between students of mono-grade and multi-grades classes. However, the 'off-task' time of students is a little more in a multi-grade class than in a mono-grade class in all the grades.

Although multi-grade class appears to be better in the sense that there is more Active learning activity in such classes but this finding has to be interpreted with caution. It is likely that 'more time spent on studying on their own' in a multi-grade class may not be a well planned self-learning activity; it may be just due to students having no option but just to sit and appear to be studying when the students of the other grade or grades are being taught by the teacher.

Tables A4 to A8 of Annex A show similar results with regard to difference between multi-grade and mono-grade classes when comparison is made in respect of students' time spent on different activities in different subjects for all five states separately.

5.10 Correspondence between Teacher Activities and Student's Activities

A question that arises and needs answering is about what the students do when teacher is engaged in a particular teaching activity. For most of the teacher activities, students are supposed to be engaged in a learning activity that corresponds to the particular teaching activity. For example, when teacher is 'lecturing or explaining something verbally' students are supposed to be 'listening attentively or observing the teacher'. But all the students may not be doing that; some may be busy doing something else. If all the students listen attentively while the teacher talks, it is expected that during that time, 100% of student time will be spent on 'attentively listening or observing' activity. If some students are engaged in another activity, which may or may not be a learning activity, it means all students are not learning what they are supposed to be learning during that time according to the teaching going on in the class. Let us see what percentage of student time is spent on different activities of students against each teacher activity. Two activities, 'Project work/ creative activity' and 'encouraging one or more students' are left out since less than 2% of teacher time is spent on these activities in any class.

The details of time spent on different activities by students when teachers were busy with different teacher centric, student centric, supportive/ instructional activities and off-task are given in Table 5.9. The table is derived from the aggregate data of all the five states.

5.10.1 Teacher Centric Activities of Teachers

(i) Teacher Activity - Lecturing/ Explaining Verbally

Overall in grades II, IV and VI, teachers spend 17.0% of their time on this activity (refer Table 5.9). While the teacher is engaged in this activity, 81.4% of student time is spent on 'listening or observing attentively', 11.4% on other types of activities and 7.4% on being off-task. In grade II, the percentage of teachers' time on 'lecturing' is less (13.6%) and student-time spent on 'listening attentively' is also slightly less (77.0%) compared to that in grades IV and VI. Thus overall about one-fifth of student time is spent on something else and not on listening to the teacher when the teacher is lecturing or explaining something.

(ii) Teacher Activity – Writing on Blackboard

Overall teachers spend 19% of teaching time on 'writing on blackboard'. While they are busy doing this, 51.9% student time is spent on 'listening/ observing' and 26.8% on 'copying' what is being written on the blackboard. In class II, the student-time spent on 'listening/ observing' is relatively less and on 'copying' it is more compared to classes IV and VI. The remaining student-time is spent on other activities or being off-task.

(iii) Teacher Activity – Reading From Book

Teachers spent 7.4% time on 'reading from book'. While they read, students generally listen but sometimes they read aloud along with the teacher. Just 'listening' is more common in higher classes and 'reading aloud' by students is more common in class II; student-time spent on reading aloud declines sharply in classes IV and VI.

(iv) Teacher Activity – Giving Dictation

Only about 2% teachers' time is spent on giving dictation to students. When teacher is giving dictation, 19% of student-time is spent on listening to what the teacher says and 51.2% on 'writing what is dictated'. The student-time spent on 'listening' is more in classes IV and VI than in class II, in class II children spend more time on writing what is dictated. Student time spent on other activities during dictation is as much as 21% and off-task is only 4.3%.

(v) Teacher Activity – Observing or Supervising Student Activity

Students are generally busy doing different things when the teacher is simply observing or supervising what they are doing. Overall teachers spend 9.8% of their time on observing/ supervising, while students are mainly busy with 'doing assignments' (25.9%) copying or 'writing some orally given work' (13.6%) or doing something else. Only 8.9% of student-time is off-task when teacher is observing or supervising the class.

5.10.2 Student Centric Activities of Teachers

(i) Teacher Activity – Providing Feedback

When teacher provides feedback to students (refer Table 5.10), students mostly

Table 5.9: Student's activities corresponding to overall teacher centric activities

	Teacher's Activity	% of Teachers' time				Students' Activity	% of Students' time			
		II	IV	VI	Overall		II	IV	VI	Overall
1	Lecturing	13.6	16.8	18.8	17.0	Listening/ Observing Attentively	77.0	82.6	82.8	81.4
						Off-task	8.8	7.9	6.2	[illegible]
						Others	14.2	9.5	10.9	[illegible]
2	Writing on Black Board	18.4	17.6	20.3	19.0	Listening/Observing Attentively	48.7	50.5	54.5	[illegible]
						Copying	28.0	26.7	26.2	[illegible]
						Off-task	9.2	8.7	6.8	[illegible]
						Others	14.2	14.1	12.5	[illegible]
3	Reading from Book	7.1	8.4	6.9	7.4	Listening/Observing Attentively	44.4	56.1	73.0	[illegible]
						Reading aloud	36.7	16.3	6.2	[illegible]
						Off-task	7.3	9.3	9.8	[illegible]
						Others	11.6	18.4	11.1	[illegible]
4	Giving Dictation	2.5	1.9	1.9	2.0	Listening/ Observing Attentively	12.8	24.6	18.0	[illegible]
						Taking Dictation	56.1	44.9	53.5	51
						Off-task	5.7	3.7	4.2	[illegible]
						Others	15.4	26.9	19.4	21
5	Observing or Supervising Students Activity	11.7	10.9	8.1	9.8	Studying on their own	9.7	7.8	9.4	[illegible]
						Copying and writing orally given work	12.9	10.4	16.2	13
						Peer learning/working in small groups	3.6	4.0	4.2	[illegible]
						Doing assignment	28.2	28.3	23.0	25
						Off-task	10.5	8.7	5.1	7.
						Others	35.1	40.9	42.1	40.

listen or observe (35.7% student-time) and spend the remaining time on other activities including being Off-task.

(ii) Teacher Activity – Asking Questions

Teachers spend substantial part of their teaching time on 'Asking questions' (14.4% time). During this activity, student-time spent on 'listening' is 42.7% and on 'answering questions' is 28.5%, the rest of the time is spent on other activities.

(iii) Teacher Activity – Replying Questions

Teachers spend only 2.7% time on replying to questions asked by students, possibly because students do not ask questions since overall student-time spent on asking questions is only 1.5%. However, when teacher replies to questions, student-time spent on listening is 43.2% and on other activities (including being off-task) is 56.8%.

(iv) Teacher Activity – Demonstrating Use of TLM/ TLE

Teachers spent 7.8% time on this activity but when teacher is engaged in this activity, students mostly listen or observe (53.3% student-time) or themselves get busy using TLM or TLE (24.9% time). Student-time spent on other activities is not much during this time.

Table 5.10: Students' activities corresponding to student centric activity of teachers

	Teacher's Activity	% of Teachers' time				Students' Activity	% of Students' time			
		II	IV	VI	Overall		II	IV	VI	Overall
1	Providing Feedback	4.1	3.1	3.4	3.5	Listening/Observing Attentively	33.2	33.0	39.0	**35.7**
						Off-task	9.3	7.7	5.2	7.0
						Others	57.5	59.3	55.8	57.3
2	Asking Questions	12.8	14.2	15.4	14.4	Listening/ Observing Attentively	40.9	38.9	46.5	42.7
						Answering Questions	30.9	32.6	24.2	28.5
						Off-task	7.9	7.7	5.9	6.9
						Others	20.2	20.8	23.4	21.8
3	Replying Question	2.7	2.8	2.6	2.7	Listening/Observing Attentively	36.4	41.2	48.1	43.2
						Off-task	7.9	7.0	4.0	5.9
						Others	55.7	51.8	47.9	50.9
4	Demonstrating TLM/TLE	7.4	7.0	8.6	7.8	Listening/Observing Attentively	47.4	46.5	61.4	53.3
						Using TLE/TLM	26.9	29.6	20.3	24.9
						Off-task	7.1	5.6	4.6	5.5
						Others	18.6	18.3	13.7	16.3

5. .3 Supportive Instructional Activities of Teachers (Giving or Correcting Homework)

(i) Teacher Activity – Giving Homework

Teachers spend 8.4% time on giving homework (refer Table 5.11). The major student activity at this time is 'copying' on which 41.1% of student-time is spent; other significant student activities during this time are 'doing assignment' (19.6%) and 'listening' (17.9%). Students of class VI spend more time on 'copying' than those of classes II and IV when the teacher is giving homework.

(ii) Teacher Activity – Correcting Homework

Teachers generally do not correct home work in the class. Only 2.3% teachers' time was found to be devoted to 'correcting homework'. During this time, students were generally 'doing assignments' or studying on their own, the student time spent on these activities being 25.2% and 13.7% respectively, the remaining time being devoted to other learning or class management activities or being 'off-task'.

Table 5.11: Students' activities corresponding to supportive instructional activity of teacher

	Teacher's Activity	% of Teachers' time				Students' Activity	% of Students' time			
		II	IV	VI	Overall		II	IV	VI	Overall
1	Giving Homework	9.2	9.0	7.6	8.4	Listening/Observing Attentively	18.3	18.0	17.6	17.9
						Copying	37.3	39.5	44.2	[illegible]
						Doing assignment	20.7	20.2	18.5	[illegible]
						Off-task	9.5	6.8	4.8	[illegible]
						Others	14.1	15.4	14.8	[illegible]
2	Correcting Homework	3.2	2.3	1.7	2.3	Studying on their own	20.0	17.5	7.7	[illegible]
						Copying or writing orally given work	11.4	16.3	7.0	[illegible]
						Doing assignment	27.7	22.2	26.3	[illegible]
						Off-task	8.9	9.1	10.4	[illegible]
						Others	32.0	35.1	38.5	[illegible]

5.10.4 Teacher – Being Off-task

Teacher is off-task when he/ she attends to visitors or goes out of class or is not teaching and is busy doing something else. Only 2.2% teacher-time was 'off-task', possibly the presence of investigators in the class prevented teachers from being 'off-task'. During such time, students generally are also 'off-task' or 'study on their own' or become busy 'doing assignments'. The student-time spent on these three activities was 33.1%, 25.0% and 11.1% respectively of the total students-time spent on various activities during the time span when teacher is off-task.

5.11. Summary

(i) Time spent by students in classroom was observed in respect 19 activities generally undertaken by them. These activities were broadly classified as **(a) Active learning (b) Passive learning (c) Mechanical tasks (d) Class management and (d) Off-task.** Of the total students' time spent on classroom activities, percentage of time students spent on the aforesaid activities was 24.7, 46.9, 15.4, 5.1, and 7.8 respectively, Clearly, a little less than half of their time was spent on Passive learning whereas time spent on Active learning was about one fourth of their total time. Time spent on Active learning activities varied considerably across states from 20.7[illegible] in Haryana to 33.2% in Orissa. Similar w[illegible]e situation in the case of time spent on P[illegible]ve learning (39.2% in Orissa to 52.8[illegible] in Maharashtra) and Mechanical tasks (1[illegible]% in Maharashtra to 20.4% in Haryana)[illegible]e other two activities, i.e., Class manage[illegible]t (2.4% in Assam to 6.5% in Haryana) [illegible]d Off-task (6.5% in Haryana to 10.4[illegible]n Karnataka, did not indicate variatio[illegible]o that extent.

(ii) Passive learning time gradually incr[illegible]s from 41.2% in grade II to 53.7% in g[illegible]e VI where as Active leaning time decr[illegible]s from 26.4% in grade II to 22.0% in grad[illegible]. Further, Mechanical tasks (18.5% in g[illegible]e II to 12.7% in grade VI) and Off-task (9[illegible]% in grade II to 6.3% in grade VI) indica[illegible]d decreasing trend from grade II to grade[illegible]I whereas Class management activities (4.[illegible]% in grade II to 5.3% in grade VI) indicated slightly increasing trend.

(iii) Overall students' time spent on Active learning in mathematics (29.5%) is the maximum as compared to language (21.6%), EVS (24.5%) in grade IV and Social Studies (21.6%) and science (20.2%) in grade VI. In the case of Passive learning activities the position is quite different, i.e more time for science (55.5%), Social Studies (55.0%)

and EVS (49.6%) as compared to language (48.8%) and mathematics (40.7%). The mechanical tasks took almost the same time in language (16.9%) and mathematics (16.6%) classes whereas time spent on such tasks was less in EVS (12.9%), Social Studies (11.4%) and science (10.6%) classes. Further, teachers' time spent on class management (varied from 4.3% in language classes to .2 % in science classes. Off-task time of teachers did not show much variation across subjects; it remained between 6.3% and 8.3%.

(ii Incidence of multi-grade teaching varied widely across states. Students classroom activities showed some difference between mono-grade and multi-grade classes. For example, time spent on Active learning was slightly more in multi-grade classes than in mono-grade classes whereas the opposite was true in the case of passive learning in all the grades and subjects. Time spent on Mechanical tasks showed ambivalent situation when multi or mono-grade classes were compared for different subjects and grades. Time spent on Class management and Off task activities remained almost the same for mono-grade and multi-grade classes.

(i Time spent by students on each of the 19 activities inside classroom was also analysed. Of these, overall maximum time (44.9%) was spent on **listening to the teacher or observing attentively** what the teacher was demonstrating or doing (an activity under Passive learning). It increased from grade II (38.3%) to grade VI (51.7%). Further, time spent on this activity in mathematics (35% in grade II to 44.8% in grade VI) was less than that in language (41.6% in grade II to 55.0% in grade VI), EVS (48.1%), Social Studies (53%) and science (54.1%). Only one activity under Mechanical tasks, **Copying or writing (11.7%)**, took relatively more time of students; the time spent on it was more in mathematics (about 15%) whereas it was between 9% and 11% in other subjects in all the three grades. Further, under Active learning the student-time spent on **'answering questions'** did not vary much across grades and subjects; it remained in the range of 5.6% to 7.8% of total student time. Time spent on **'doing assignments'** showed variation across subjects but not much across grades for the same subject. It was about 11% in mathematics but only between 4% and 6% in other subjects. The total students-time spent on the four remaining Active learning activities was about 6.7%; it included **seeking clarification** (1.5%), **peer learning/ working in small groups** (1.8%), **using TLM/TLE** (2.4%) and **project work or creative activities** (1.0%). Obviously the time spent by students on such important activities was only marginal.

(v) Analysis was done to find out how much student-time was spent on the activity that was directly related to a particular activity of the teacher. For example, what percentage of student-time was spent on **'listening to the teacher'** when teacher was 'lecturing/ explaining' and what percentage of time was spent on other student activities. It was found that 81.4% student time during that period was spent on listening attentively to the teacher when the teacher was lecturing and 18.6% time was spent on other unrelated activities or being off-task. There were five other teacher activities, namely, writing on blackboard, reading from a book, giving dictation, demonstrating use of TLM/ TLE and observing/ supervising students' activities, on which 20% to 25% student-time of the duration in which teacher was engaged in one of these activities, was spent on being off-task or being busy with activities that were unrelated to the particular teacher activity.

Chapter 6

REMEDIAL TEACHING

6.1 Provision for Remedial Teaching in Schools

One of the objectives of the study was to find out whether remedial teaching takes place in schools and if so, in what form. Head teachers were asked to provide information on whether their schools had any special arrangement for remedial teaching of weak students, what strategy was adopted for that, whether extra classes were organized for them and if so, how many children attended such classes. Teachers were also asked about how they provided remedial instruction in case they provided any. In this chapter, the findings based on responses of head teachers and teachers are reported.

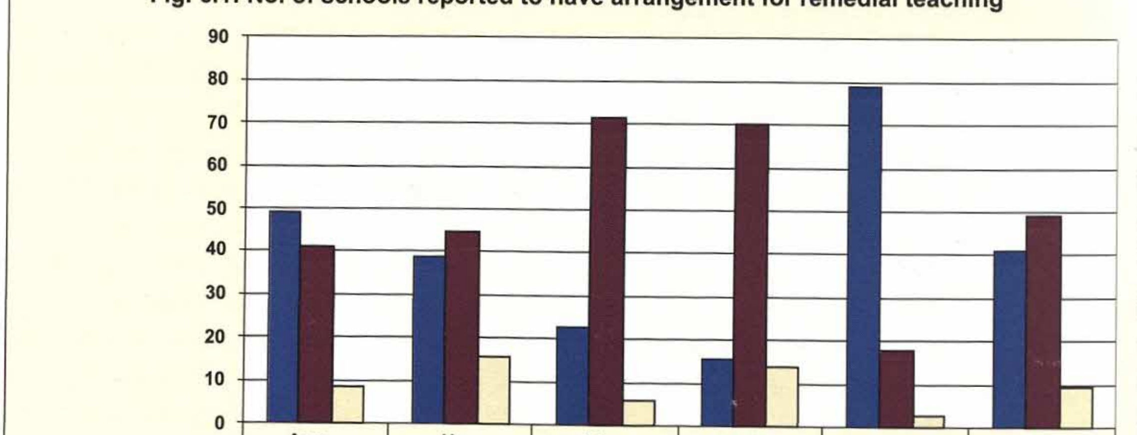
According to head teachers (Fig.6.1), only in 58.8% schools there was some arrangement for remedial teaching. This percentage varied from 21% in Orissa to 84 % in Maharashtr The variation from state to state is very large.

In Orissa, remedial teaching was en least attention, as out of 100 schools cove in the study, 79 schools had not made provisi or any remedial teaching. Number of such s ols in Assam, Haryana, Karnataka and Mahar ra are 49, 39, 23 and 16 respectively out o 00 selected for the study. About 70 scho of Karnataka and Maharashtra reported tha ey arranged remedial teaching on working ys. Schools organizing this activity during hol ys constituted a small number varying from in Orissa to16 in Haryana.

6.2 Modes of Remedial Teach g During Working Days

For remedial teaching, schools m e different types of arrangement like giving a

Fig. 6.1: No. of schools reported to have arrangement for remedial teaching



	Asm	Har	Kar	Mah	Ori	Overall
■ No arrangement	49	39	23	16	79	41.2
■ Working days	41	45	71	70	18	49
☐ Holidays	9	16	6	14	3	9.6

attention within class or during recess or some other time, organizing extra classes outside school hours and administering additional tests suitable for the level of weak students'. Of the tot schools (245) providing remedial teaching in .2% schools extra attention was given to ak students within class; 56.7% schools ar ed extra classes outside school hours; 2 administered tests suitable for their levels ar .0% provided help to weak students during re or some other time. The percentages do no d to 100 as many schools adopted more th ne strategy for remedial teaching.

In all the states, giving extra attention wi n class was a common mode of providing re dial teaching. In addition to it, extra classes out side school hours were also arranged in a large number of schools of Haryana, Karnataka and Maharashtra. Schools of Karnataka and Maharashtra actually adopted all the different modes and gave more importance to remedial teaching.

The percentage of students who benefited from remedial teaching was calculated only for those schools in which the relevant programme of remedial teaching existed. In Assam, 10.1% students of 29 schools received extra attention during the class and 2.8% students of 8 schools were given remedial teaching during recess or other time. As already pointed out above that most of the remedial teaching was in the form of extra attention within the class in the case

Table 6.1: Percentage of schools according to modes of remedial teaching during working days

	Assam	Haryana	Karnataka	Maharashtra	Orissa	Total	%
N schools having remedial teaching	**41**	**45**	**71**	**70**	**18**	**245**	**100**
Mode of remedial teaching							
E attention within class	29	21	60	47	10	167	68.2
H n recess or other time	8	3	18	21	4	54	22.0
A nistering additional tests suitable f eir level	8	7	21	34	0	70	28.6
E classes outside school hours	4	26	46	58	5	139	56.7
A gement other than above	3	0	6	6	1	16	6.5

Table 6.2: Percentage of students who benefitted from remedial teaching and average time (hours/ week) spent on remedial teaching

Mode of remedial teaching		Assam	Haryana	Karnataka	Maharashtra	Orissa	Mean
Extra attention within class	% of Students	10.1	6.6	6.1	6.3	5.5	6.9
	Average time spent	5.4	1.7	2.7	2.2	1.8	2.8
Help in recess / other time	% of Students	2.8	0.4	2	2.9	2.4	2.1
	Average time spent	1.9	0.2	0.6	1.7	1.3	1.1
Schools administering tests to weak students for remediation	% of Students	1.7	1.6	2.7	4.7	0	2.1
	Average time spent	0.5	0.6	0.5	1.8	0	0.7
Extra classes outside school hours	% of students	0.5	9.6	8.1	9.7	7.5	7.1
	Average time spent	1.5	3.8	2.5	2.7	1.9	2.5
Arrangements other than the above	% of students	0.4	0	1	0.7	0.8	0.6
	Average time spent	0	0	0.2	1.2	0.3	0.3

of other states where percentage of students benefited varied from 5.5 in 47 schools of Orissa to 6.6 in 21 schools of Haryana and in the form of extra classes outside school hours where students' participation varied from 7.5% in 5 schools of Orissa to 9.7% in 58 schools of Maharashtra.

Time spent in terms of hours per week was maximum (5.4) for extra attention within class in the case of Assam. In other states the time spent on remedial teaching of any type was less than 2 hours per week.

6.3 Remedial Teaching During Holidays or Vacations

According to Table 6.3, special arrangement for remedial teaching during vacations or holidays was provided by very few schools. The number of such schools (out of 100) varied from 3 in Orissa to 16 in Haryana. Number of upper primary schools organizing this activity was more than that of primary schools. Further, a little more than half of such schools identified weak students by administering suitable tests with Orissa as an exception where students were not administered any test for this purpose.

Table 6.4 shows the average number of students of primary schools who attended extra classes varied between 25 per school in Orissa and 38.2 per school in Karnataka but the number was as large as 115.2 in Haryana. Average number of days for which extra classes were held varied widely from 9[illegible] in Assam to 91.8 in Karnataka. Similarly, average

Table 6.3: No. of schools organising extra classes for weak students during holidays/vacations

Schools	Assam		Haryana		Karnataka		Maharashtra		Orissa		To	
	Pr.	U.Pr	Pr.	U.Pr	Pr.	U.Pr	Pr.	U.Pr	Pr.	U.Pr	Pr.	r
Total schools	58	41	56	44	58	42	53	47	60	40	285	4
No. of schools organising extra classes	3	6	4	12	2	4	6	8	1	2	16	2
No. of schools identifying weak students on the basis of test	2	3	1	6	1	3	4	5	0	0	9	3

Table 6.4: Extra classes for weak students during holidays or vacations in primary and upper primary schools

	Assam	Haryana	Karnataka	Maharashtra	Or a
Primary schools					
Average number of students per school who attended extra classes	26.4	115.2	38.2	27.2	25.0
Average number of days on which extra classes held during 2006	9.8	46.2	91.5	44.5	78.0
Average number of hours per day for on extra classes	1.2	1.1	4.3	4.2	2.0
Upper primary schools					
Average number of students per school who attended extra classes	80.9	65.7	32.2	26.6	108.0
Average number of days on which extra classes held during 2006	18.0	65.9	83.0	56.3	6.0
Average number of hours per day for on extra classes	1.5	1.5	1.2	2.3	1.0

time spent on organizing these classes per day varied from 1.1 hours in Haryana to 4.3 hours in Karnataka. All this information is for the ve y few schools that organized extra classes d ng holidays

Average number of weak students of u r primary classes, who attended extra c s during vacations, varied from 26.8 in M rashtra to 108 in Orissa. Average number d on which these classes were held in s ols that had extra classes was maximum ( ) in Karnataka and minimum (6.0) in C a. Average time spent per day on remedial t ing varied 1.0 hour in Orissa to 2.3 hours in Maharashtra. Again this information is for t very few upper primary schools in which e a classes were organized.

6 Feedback from teachers on remedial teaching

In addition to the information provided h ead teachers about the strategies adopted f remedial teaching in their schools, such rmation was also collected from the hers, whose classes were observed. Response eachers about remedial teaching in grades V and VI is presented in Tables 6.5, 6.6 and (respectively. It may be noted that these percentage are only for those schools in which remedial teaching takes place.

The most common approach to remedial teaching that teachers adopted was 'paying extra attention to students in the class itself.

In grade II, about 21% teachers in Orissa and 61% in Karnataka said that they paid extra attention to students during the class (Table 6.5). In the other states, this percentage was between 35% and 45%. Further, only 1.2% teachers in Haryana, took extra classes within school hours while this percentage of such teachers was quite large (27% and 28%) in Karnataka and Maharashtra. Average time spent by teachers on extra classes in the five states varied from 0.5 to 2.3 hours per week. Percentage of teachers reporting that they took classes outside school hours was quite high in Haryana (22.9%) and Karnataka (17.5%) as compared to Assam and Orissa where this percentage was less than 6%.

Percentage of teachers of grade IV who claimed that they gave extra attention to weak students in their classes, varied between 21.4% in Orissa and 55% in

Table 6.5 : Percentage of teachers and average time (hours/ week) devoted to remedial teaching done in different ways in grade II

Percentage of teachers providing remedial teaching	Assam	Haryana	Karnataka	Maharashtra	Orissa
Teachers paying extra attention in the class	45.1	40.4	61.2	35.8	20.8
Teachers taking extra classes within school hours	11.0	1.2	27.2	28.4	8.2
Average time spent within school hours	0.5	2.3	0.6	2.2	1.8
Teachers taking extra classes outside school hours	3.3	22.9	17.5		5.7
Average time spent outside school hours	9.0	0.7	0.6		3.0

Table 6.6: Percentage of teachers and average time (hours/ week) devoted to remedial teaching done in different ways in grade IV

Percentage of teachers providing remedial teaching	Assam	Haryana	Karnataka	Maharashtra	Orissa
Teachers paying extra attention in the class	40.9	49.2	55	40.4	[illegible]
Teachers taking extra classes within school hours	12.4	1.8	27.1	34.3	[illegible]
Average time spent within school hours	0.7	3	8	2.5	[illegible]
Teachers taking extra classes outside school hours	6.7	30.3	24.8	1.6	[illegible]
Average time spent outside school hours	0.3	0.9	0.8	1.7	[illegible]

Karnataka (Table 6.6). Besides, 34.3% teachers of Maharashtra and 27.1% of Karnataka reported that they spent 2.5 hours and 0.8 hours per week respectively on remedial teaching by taking extra classes within school hours. The percentage of teachers taking extra classes outside school hours was substantial only in Haryana (30.3%) and Karnataka (24.8%).

The position of remedial teaching in grade VI is not much different from that of teachers of grade II and grade IV. Table 6.7 shows the percentage of teachers who claimed to be doing remedial teaching in class VI and the time devoted to it in the different states. While giving extra attention to weak students within the class was more common in every state, in Haryana and Karnataka, many teachers took extra classes for weak students outside school hours and in Assam, Karnataka and Maharashtra a more common practice was taking extra classes within school hours.

Table 6.7: Percentage of teachers and average time (hours/ week) devoted to remedial teaching done in different ways in grade VI

Percentage of teachers providing remedial teaching	Assam	Haryana	Karnataka	Maharashtra	Orissa
Teachers paying extra attention in the class	48.4	46.4	58.2	35.7	23.2
Teachers taking extra classes within school hours	24.6	1.4	38.8	34.3	12.5
Average time spent within school hours	1.76	3.3	0.8	6.3	1.6
Teachers taking extra classes outside school hours	7.94	32.6	26.5	6.4	11.6
Average time spent outside school hours	1.01	0.8	0.9	1.8	3.7

6.5 Summary

The percentage of schools where no remedial teaching takes place is quite large in every state and particularly in Orissa. In Karnataka and Maharashtra and to some extent in Assam and Haryana, teachers provide remedial teaching to weak students mostly by paying them extra attention within the class. In a few cases they take extra classes for them within school hours and in very few cases outside school hours or during vacations or holidays also.

Chapter 7

RELATIONSHIP OF CLASSROOM ACTIVITIES WITH STUDENTS' SCHOLASTIC ACHIEVEMENT

7.1 Context

This chapter deals with the sixth objective of the study namely, to identify broad categories or patterns of teachers' and students' tasks/activities and to find out if there is any association between such patterns and scholastic achievement of students. The relationship of students' scholastic achievement with teachers' and students' activities inside classroom has been explored separately.The effect of certain variables relating to students and teachers was partialled out before assessing the extent of contribution of time spent by teachers and students on different activities to students' achievement.. Only for grade IV this analysis was carried out. For the purpose of assessing scholastic achievement, locally available language and mathematics achievement tests were administered to those grade IV students whose mathematics and language classes were observed.

7.1.1 Classroom Observation Method

As already mentioned in Chapter 1, an adaptation of the Stallings' method of classroom observation was used to observe different activities of students and teachers inside classroom.There were 17 teachers' activitie d 19 students' activities (listed in TS-4 Sche), which teachers and students normally pe n in the classroom. To observe these act s objectively, the duration of 30 minutes s period was divided into ten equal parts part being of three minutes duration. As al y explained earlier, the first minute was spe observing the activities and the subsequen o minutes for recording separately the tea and students' activities. Thus there were n snapshots of observation of students' d teachers' activities during a class of 30 mi s. In each school only one period of a class s observed.

7.1.2 Sample of Schools and Students

Of the total of 100 schools selected f study, a sub-sample of 20 schools having IV was drawn randomly in each state by g proportionate representation to rural and areas.All students of grade IV who were obs for classroom activities were administered language and mathematics achievement The realized sample of schools and studen is presented in Table 7.1.

Table 7. 1: Sample size for administering achievement test

Sample of	Assam	Haryana	Karnataka	Maharashtra	Orissa	All
Schools	20	20	21	16	15	92
Students	226	536	395	388	292	1837

7.1.3 Approach to Analysis

For exploring aforesaid relationship, the Two-level Hierarchical Linear Modeling (HLM) method was used for estimation of contribution of the relevant independent (also known as explanatory) variables to achievement scores in language and mathematics separately. The first level explanatory variables used in the analysis pertained to characteristics of individual students and the second level explanatory variables pertained to class or school characteristics including teachers' time spent on activities and time spent by all or more than 10 students on different activities. This HLM analysis was carried out separately for each state.

It is to be noted that the 17 teachers' activities and 19 students' activities are inter-dependent. Consequently, there could be some multicollinearity as a result of which the contribution of some explanatory variables becomes statistically insignificant even if actually it is not. As a safeguard, teachers' and students activities were analysed separately. Further, the sample size of schools for this analysis in the states varied from 15 in Orissa to 21 in Karnataka (refer Table 7.1). In view of the smallness of sample, it was considered worthwhile to classify 17 teachers' activities and 19 students' activities into five broad categories so that these are used as independent variables. The time spent on these five categories of activities constituted five independent variables.

As mentioned above the association of achievement scores was examined separately with teachers' and students' activities in the classroom. The definitions and descriptive statistics of all the variables are presented in the following section. The variables specific to teachers' and students' activities are defined in the relevant sections.

7.1.4 Test Scores

The items included in the achievement tests covered almost whole syllabus of grade IV. Obviously the tests included the content dealt within the class which was observed for 30 minutes. Thus the achievement scores used in the analysis are not exactly the indicators of learning during the class but only of their general achievement level.The raw scores in each test were expressed in the form of percentage of maximum marks of the test. As the locally available tests were used, it was felt necessary to standardize the scores in each state making the state level mean zero and standard deviation 1. This transformation helped in achieving parity in the difficulty level of the tests across the states. The transformed scores thus obtained for language and mathematics were used as dependent variables, which will be referred to as 'achievement in language' and 'achievement in mathematics' respectively in this chapter.

7.2 Definitions and Descriptive Statistics of Variables

7.2.1 Student Level Variables

The student level variables considered for analysis are defined below. Variable names and response codes are indicated within brackets.

Dependent Variables

- Student's achievement in language
- Student's achievement in Mathematics

Independent Variables

- Student's gender (gender: 0 for boys and 1 for girls)
- Students' attendance rate (Attendance rate: percentage of days attended school).

The means and standard deviation (sd) of test scores (raw scores), gender and attendance rate are given in Table 7.2 for all the 5 states. It is to be noted that both mean and sd within state were almost the same for language and mathematics The mean language score varied across states from 49.3 in Orissa to 61.0 in Assam and the mean mathematics score varied from 44.8 in Orissa to 59.2 in Assam.

Table 7.2: Mean and standard deviation of student level variables

Variable	Assam		Haryana		Karnataka		Maharashtra		Oris
	Mean	sd	Mean	sd	Mean	sd	Mean	sd	Mean
Language score	61.0	22.2	54.7	25.8	56.8	23.6	55.9	22.1	49.3
Mathematics score	59.2	24.0	54.0	25.1	55.7	24.0	56.4	21.9	44.8
Gender (girl=1, boy=0)	0.5	0.5	0.6	0.5	0.4	0.5	0.5	0.5	0.5
Attendance rate	65.6	14.1	87.0	14.7	87.8	14.0	93.1	10.4	79.5

7.2.2 Variables Pertaining to Teachers Activities Inside Classroom

In the Class Observation Sheet (TS4) schedule, there are 17 possible activities in which teachers are normally engaged in classroom. In every snapshot, the observers had to observe what the teacher was doing and tick the activity in which he/ she was engaged at that moment. Activity-wise distribution of teachers' time was derived for each class and each subject in every state. The 17 teacher activities were divided into the following 5 categories. For the purpose of this analysis, the number of snapshots (an indicator of time) devoted to the activi of teachers in grade IV language and mathe cs classes were aggregated for each one of th ve broad categories. The time spent on each ad category of teachers' activity was used n independent variable. Each of these is d d as percentage of time spent by a teacher a particular category of activities.

The tim.e spent by teachers on 5 categories of teacher activities constitu 5 independent variables relating to tea s' activity in the classroom. Although s of these categories are given in chapter recapitulate, these are summarized in Table

Table 7.3: Classification of teachers' activities into five broad categories

Category 1 Student-centric	Category 2 Teacher-centric	Category 3 Supportive instructional activities	Category 4 Class management	Category 5 Teacher off-task
• Providing feedback • Asking questions • Replying to questions • Demonstrating TLM / TLE • Project work/ creative	• Lecturing/ explaining verbally • Writing on blackboard & explaining • Reading from book • Giving dictation • Observing or supervising students' activity	• Giving homework or assignment • Correcting homework/ test papers • Encouraging one or more students	• Punishing scolding • Class management	• Attending to visitor • No activity/ out of classroom • Social interaction with others • Doing personal work

Table 7.4 shows the state-wise mean and sd at the school level of different categories of teachers' activities. In all the states, except Orissa, more than 60 percent of teachers' time in language class was spent on teacher centric activities such as lecturing, writing on blackboard, giving dictation, etc. It is 53% in the case of Orissa. Also in mathematics class, time spent on such activities was more than that spent by teachers on the remaining categories of activities. However, the time spent on teacher centric activities in mathematics class was about 10% less than that of language class with Haryana as an exception where it is the same for both the subjects. The time spent on student-centric activities (Category 1) was considerably less compared to Category 2 activities in both the subjects. Its value about 18% to 26% in language class and 13% to 41% in mathematics class. Mean of teachers' time on Category 3 activities (supportive instructional activities) was marginally higher in mathematics class than in language class in all the five states.

Table 7.4: Mean and sd of time spent on different category teachers' activities in language and mathematics classes

Teachers' activities	Subject	Assam		Haryana		Karnataka		Maharashtra		Orissa		Overall	
		Mean	sd	Mean	sd	Mean	sd	Mean	sd	Mean	sd	Mean	sd
Category 1-Student centric	Lang	17.8	13.9	17.8	13.9	18.5	14.9	25.7	12.9	21.7	15.8	22.5	14.9
	Math	24.8	20.8	12.9	10.9	40.6	19.8	38.6	14.9	23.2	16.8	27.7	19.8
Category 2-Teacher centric	Lang	68.3	15.8	63.4	24.8	65.9	16.8	60.4	17.8	53.0	19.8	60.8	19.8
	Math	58.4	23.8	63.4	15.8	39.6	15.8	44.6	13.9	46.5	16.8	50.5	19.8
Category 3-Supportive instructional activities	Lang	11.9	10.9	12.9	9.9	13.4	9.9	8.9	7.9	18.2	15.8	11.8	11.9
	Math	13.7	13.9	17.6	12.9	16.8	11.9	13.9	11.9	23.2	9.9	16.8	11.9
Category 4-Class management	Lang	1.0	2.0	1.0	2.0	1.0	5.0	3.0	5.0	3.0	5.9	2.0	4.0
	Math	1.0	2.0	1.0	3.0	2.0	5.9	2.0	4.0	3.0	5.9	2.0	4.0
Category 5-Off task	Lang	1.0	3.0	5.9	14.9	1.0	3.0	2.0	5.0	4.0	10.9	2.9	8.9
		3.0	7.9	5.0	8.9	1.0	4.0	1.0	3.0	5.1	10.9	3.0	7.9

7.2.3 School / Class Level Variables

The school level variables included in the analysis are

- School location (location: rural=0; urban=1),
- % of active students (percentage of students who were actively participating most of the time in the class).
- Teacher's status (Para teacher= 1; regular teacher= 0)
- Teaching environment (Multi-grade=1; mono-grade=0).

The percentage of active students in both the subjects (language and mathematics) was lowest in Maharashtra (about 34.0%) and highest in Karnataka (about 61.3%).

Table 7.5: Mean and sd of school/ class level variables

Variables	Assam		Haryana		Karnataka		Maharashtra		Orissa		Overall	
	Mean	sd	Mean	sd	Mean	sd	Mean	sd	Mean	sd	Mean	sd
School location: (urban=1,rural=0)	0.3	0.5	0.4	0.5	0.4	0.5	0.6	0.5	0.3	0.5	0.4	0.5
% active students in Lang class	55.1	33.5	53.8	26.2	61.3	22.7	34.0	24.3	46.3	20.2	51.9	[illegible]
% active students in Maths class	54.7	34.0	52.9	22.7	60.7	24.5	34.3	22.3	43.0	18.4	51.0	[illegible]
Teacher's status (Para =1; Regular = 0)	0.1	0.3	0.2	0.4	0.1	0.2	0.1	0.3	0.3	0.5	0.1	[illegible]
Teaching environment (multi-grade=1; mono-grade= 0)	0.3	0.4	0.3	0.4	0.4	0.5	0.4	0.5	0.3	0.5	0.3	[illegible]

7.2.4 Variables Pertaining to Students Activities Inside Classroom

In the Class Observation Sheet (TS4) schedule, 19 activities were listed for students. Against each activity, the investigator indicated the number of students involved in that activity using symbols I, S, M, L, A (I for one student, S for 2 to 5 students, M for 6 to 10 students, L for more than 10 to all but one and A for all students of the class). During a snapshot, all the students of any class are not necessarily engaged in the same activity; some may be engaged in one activity and others in other activities. It is possible that neither L nor A is marked in a snapshot Thus Activity-wise distributi[illegible] of students' time was obtained by aggregati[illegible] ll snapshots for each class and each subject in [illegible] ry state. As already discussed in Chapter 4, t[illegible] 19 students' activities were classified into 5 [illegible] d categories or sets: Set 1 (Active learning[illegible] et 2 (Passive learning); Set 3 (Mechanical); [illegible] 4 (Class management); and Set 5 (Off-task). [illegible] e are presented in Table 7.6. For the purp[illegible] f this analysis; number of snapshots (an ind[illegible] r of time) devoted to each of the 19 activit[illegible] f students in grade IV language and mathe[illegible] s classes was aggregated. Thus, the time spe[illegible] n each set of students' activities was used [illegible] n independent variable.

Table 7.6: Classification of students' activities into five broad categories

Category 1 Active learning activities	Category 2 Passive learning activities	Category 3 Mechanical learning tasks	Category 4 Class management	Category 5 O[illegible] task
• Studying on their own • Peer learning Answering questions • Seeking clarification • Using TLM/ TLE • Project work/ creative activity • Doing assignment	• Listening attentively to teacher • Taking dictation	• Reading aloud to class/ alone • Copying • Rote Memorization	• Waiting for teachers' attention • Being reprimanded • Assisting in classroom management	• Being un-attentive • Cross talking with others • Engaged in disruptive activities • Entering into or going out of class

Table 7.7 shows the mean student-time (as% of total time) spent on the activities of the different sets.

It is observed from this Table that in language class, percentage of student's time spent on active learning activities (Set 1) is the highest in Orissa (31.3%) and the lowest in Haryana (18%), while in the remaining states the time varied between 20.5% and 25.6%. A similar trend is observed in mathematics class too. Further, students spent slightly more time on Set 1 activities in mathematics class than that in language class in all the states with Orissa as an exception.

The average student-time spent on 'passive' learning activities (Set 2) in both the subjects is the highest as compared to other sets of activities. The average time on 'passive' learning in language class was the lowest in Orissa (40.7%). In remaining states, it varied between 48.5% in Assam to 58% in Haryana. Relatively more time is spent on 'passive' learning in mathematics too but it is considerably lower than that in language. It varied between 22.7% in Orissa and. 45.7% in Karnataka.

The average time spent on 'mechanical learning' activities (set 3), such as reading aloud to class, copying and rote memorization, was more in language class in Haryana (23%) whereas it varied from 7.3% in Orissa to 14.4% in Maharashtra. In mathematics class, more time was spent on mechanical activities in Haryana (22%) and Orissa (16.7%).compared to the other three states.

The percentage of time spent by students on 'classroom management' indicated wide variation ranging from 1.3% to 8.5% in both the subjects. Similarly, time spent 'on off-task' activities varied from 0% to 4.0% except in Haryana where in mathematics it was 6.5%.

Table 7.7: Mean and sd of % of time spent on different sets of students' activities in language and mathematics classes

Variable	Subject	Assam		Haryana		Karnataka		Maharashtra		Orissa		Overall	
		Mean	sd	Mean	sd	Mean	sd	Mean	sd	Mean	sd	Mean	sd
Set 1 Active Learning	Lang	22.0	19.4	18.0	26.7	20.5	19.4	25.6	26.6	31.3	18.1	22.9	22.3
	Math	25.0	21.9	33.5	28.2	28.1	25.4	28.1	21.1	29.3	15.8	28.8	23.0
Set 2 Passive Learning	Lang	48.5	26.6	58.0	23.8	55.7	26.0	51.3	23.6	40.7	22.5	51.4	24.9
	Math	36.0	24.8	39.5	27.0	45.7	32.3	45.0	22.8	22.7	19.8	38.4	26.8
Set 3 Mechanical learning	Lang	13.0	17.5	23.0	16.6	11.9	11.7	14.4	15.9	7.3	8.0	14.2	15.1
	Math	12.5	21.2	22.0	19.9	5.7	8.1	6.9	8.7	16.7	15.9	12.7	16.8
Set 4 Class Management	Lang	2.5	5.5	5.5	12.8	7.6	11.4	6.3	8.1	1.3	3.5	4.8	9.3
	Math	1.5	3.7	8.5	12.7	6.7	11.1	3.8	6.2	6.0	16.0	5.3	10.7
Set 5 Off-Task	Lang	0.0	0.0	1.5	4.9	3.8	10.7	2.5	7.8	1.3	3.5	1.9	6.6
	Math	1.0	3.1	6.5	23.0	3.8	17.5	1.3	3.4	0.7	2.6	2.8	13.7

7.3 DistributionofAchievementScores in Language and Mathematics

Table 7.8 shows the mean and sd of scores for different categories of children, the mean achievement score of girls was marginally higher than that of boys in language in all the states except Orissa, where boys (51.0) were seen to be performing better than girls (47.5). In mathematics also, girls' average score was slightly higher than that of boys in Assam, +Karnataka and Maharashtra. But in Haryana and Orissa, boys were observed to be performing better than girls. Further, performance of rural students in both subjects was higher than that of urban students in Karnataka and Maharashtra whereas it was otherwise in the case of Assam and Orissa (in language only). In Haryana, the mean scores of rural and urban students were comparable.

Table 7.8 also shows the percentage of active learners in each class. This percentage varies between 63% and 74.4% indicating that in every class in each state there is significant majority of the children who were rated as active learners in the class.

7.4 Analysis of Effect of Classroom Activities on Achievement

The HLM analysis was separately undertaken for language and mathematics achievement. Also effect of classroom activities on achievement in each subject was studied separately for teachers' and students' classroom activities. In each of the aforesaid four analyses 11 independent variables were used. Two these were student level variables (gender and attendance rate) and 4 were class/ school level variables (school location, % of active students teacher's status and teaching environment. These variables were common for the analysis of teachers' and students' classroom activities. The next 5 variables denoted time spent on each of the 5 categories of teachers' activities in the case of analysis to assess the effect of teachers' activities. Similarly, to study the effect of students' classroom activities, another set of 5 variables depicting time spent on each of the five sets of students' activities were used in the HLM analysis in place of 5 variables pertaining to teachers' activities.

Table 7.8: Achievement scores of students of different categories in language and mathematics

		Assam		Haryana		Karnataka		Maharashtra		Orissa	
		Lang	Math	Lang	Math	Lang	Math	Lang	Math	Lang	Math
Boys	Mean	60.0	57.9	52.9	54.8	54.6	54.7	54.6	55.9	51.0	47.8
	sd	21.8	23.1	28.3	26.1	23.1	24.6	23.1	23.8	24.1	27.8
Girl	Mean	61.9	60.4	55.8	53.5	59.5	56.9	57.1	56.8	47.5	41.7
	sd	22.5	24.7	24.1	24.6	24.1	23.4	21.2	20.0	23.3	26.2
Rural	Mean	59.5	56.5	54.5	55.2	59.9	58.4	58.7	61.9	47.8	45.7
	sd	24.2	25.3	23.7	22.5	22.5	22.8	21.8	23.8	21.9	23.0
Urban	Mean	63.5	63.7	54.9	52.2	51.8	51.4	53.9	52.4	53.1	42.7
	sd	18.3	20.9	28.8	28.6	24.7	25.5	22.1	19.5	27.6	35.4
% Of active	Mean	73.1	74.4	63.0	64.6	65.8	66.2	66.5	65.2	63.0	60.8
learners	sd	17.0	16.5	26.1	23.0	21.6	21.2	16.9	20.4	19.4	25.9

7.4.1 Contribution of Teachers' Classroom Activities to Language Achievement Scores

Amongst student level variables, student's attendance provided (Table 7.9) definite evidence of statistically significant contribution to language achievement in all the states except Karnataka. The gap in achievement between girls and boys was statistically significant only in the case of Maharashtra, where girls scored substantially more than boys. Amongst the school / class level variables included in the study, percentage of active learners in the class contributed positively in the case of Assam, Haryana and Karnataka and teacher status (where classes having para teachers), on average, scored substantially higher only in Haryana. Teaching environment (multi or mono grade teaching) did not make any difference to language achievement.

Time spent on different classroom teachers' activities did not make any consistent contribution to achievement across states, perhaps because the tests covered the whole class IV curriculum and not just what was taught in the classes that were observed. The tests that were available in the state were used to assess the achievement of students. In Assam and Maharashtra, teachers remaining 'off task' for more time, contributed to decrease in students' scores. In the case Haryana, both student centric and teacher centric activities were found to be contributing positively to language scores whereas in Maharashtra, the variable that made statistically significant contribution to language achievement was 'class management'. It is to be noted that variables making significant contribution (more than 10% of sd of Language score) are gender (Maharashtra), teacher status (Haryana), student centric activities (Haryana), teacher centric activities (Haryana), class management (Maharashtra) and being 'off task' (Assam and Maharashtra). It is to be noted that in Orissa none of the school level variables and teachers' classroom activities made any statistically significant contribution to language achievement.

The contribution of two school level variables – school location (urban/ rural) and class type (Mono/ Multi grade) and also of teacher's supportive instructional activities in the class were not found to be significant in any of the five states.

Table 7.9: Regression coefficients of school level variables and teachers' classroom activities with achievement in language

State	Student variable		School/ class level variable		Classroom teachers' activities			
	Attendance rate	Gender Girl=1, boy=0	% of active students	Teacher's Status para =1; regular = 0	Student centric	teacher centric	Class management	Off task
Assam	0.026**		0.011**					-1.504**
Haryana	0.016**		0.009**	0.472*	0.137**	0.174*		
Karnataka			0.017**					
Maharashtra	0.024**	0.336*					0.426*	-0.328**
Orissa	0.018**							

(* Significant at 5% level; ** Significant at 1% level). Values that are not significant even at 5% level have not been shown.

7.4.2 Contribution of Students' Classroom Activities to Language Achievement Scores

The attendance rate of students contributed to language achievement in all the states except Karnataka. Higher test scores were associated with higher attendance rate of students. Another variable that contributed to language test scores in Assam, Haryana and Karnataka was 'percentage of active students in the class'. The other variables that made substantial contribution are 'gender' in Maharashtra and 'Teachers' status' in Haryana.

The variables pertaining to classroom students activities that made statistically significant contribution are students' time spent on passive learning' in Assam and time spent on 'mechanical learning' in Karnataka. Students being 'off task' made statistically significant difference in neg direction in Maharashtra and Orissa as it to lowering of scores. The contribution of school level variables, School location (ur rural) and class type (Mono/Multigrade) and of students' active participation in learning participation in activities of class manageme the class were not found to be significant in of the five states.

Table 7.10: Regression coefficients of language achievement on students and school level variables and classroom students' activities

State	Student variable		School/ class level variable		Classroom activities of students		
	Attendance rate	Gender Girl=1, boy=0	% of active students	Teacher's Status para=1; regular = 0	Passive learning	Mechanical learning	Off-tas
Assam	0.025**		0.016**		0.015**		
Haryana	0.016**		0.011*	0.420*			
Karnataka			0.019*			0.026**	
Maharashtra	0.024**	0.333*					-0.016
Orissa	0.018**				-0.011**		-0.062

(* Significant at 5% level; ** Significant at 1% level)

7.4.3 Contribution of Teachers' Classroom Activities to Mathematics Achievement

Attendance rate was found to be contributing significantly to achievement in mathematics test (refer table 7.11) in all the states except Karnataka. Girls scored substantially lower than boys in mathematics in Orissa, but not in other states. school location (rural or urban) made a significant difference in Assam, where there was substantially higher mathematics achievement in the case of urban students compared to students of rural areas. Teacher's status did not contribute mathematics test scores in any state exc Haryana, where mean scores were significan higher in the case of para-teachers. Whether the class was mono-grade or multi-grade did not make any difference to achievement in mathematics.

As in the case of language achievement score, it is evident from Table 7.11 that any definite trend across states was not visible. In Assam, there was fairly substantial contribution of two types of teachers' activities, namely 'student centric activities' and 'class management' to mathematics achievement. Contribution

Table 7.11: Regression coefficients of mathematics achievement on students and school level variables and classroom teachers' activities

State	Student variable		School/ class level variable		Classroom teachers' activities		
	Attendance rate	Gender Girl=1, boy=0	School location urban=1 rural=0	% of active students	Student centric	supportive instructional activities	Class management
Assar	0.023**		0.831*	0.017**	0.155**		1.019**
Hary	0.015**						
Karn				0.021**			0.367*
Mah a	0.016**						
Oris	0.022**	-0.222*				0.263*	

(* Si nt at 1% level; ** Significant at 5% level) – Regression coefficients not significant even at 0.05 level are not shown in the table.

of e spent by teachers on the different clas m activities to students' achievement in mat natics was insignificant in Haryana and Ma shtra. In Karnataka, teachers' time spent on s management' and in Orissa, teachers' tim ent on 'supportive instructional activities' mac ignificant contribution to mathematics test res. Teacher's status (Regular/ Para) and class pe (mono/ multigrade), teacher centric acti s and teacher being off-task in the class wer ot found to be significant in any of the five tes.

7.4. Contribution of Students' assroom Activities to Mathematics chievement

ontribution of student variables and hool/ class variables to mathematics achievement scores is similar to that indicated in the preceding sections. The contribution of 'students' attendance' is significant in all the states except Karnataka. School location had significant effect on achievement only Assam, with urban schools showing higher achievement. Gender made significant difference to achievement only in Orissa, where boys had better achievement than girls. The percentage of active students in class had positive impact on achievement in Assam and Karnataka. Among the classroom activities of students, no definite trend emerged. Only in Assam, student-time spent on Active learning had significant positive effect on achievement. Time spent on passive learning did not show nay impact on achievement in

Table 7.12: Regression coefficients of mathematics achievement on students and school level variables and classroom students' activities

State	Student variable		School/ class level variable		Classroom activities of students			
	Attendance rate	Gender Girl=1, boy=0	School location urban=1, rural=0	% of active students	Active learning	Mechanical learning	Class management	Off –task
Assam	0.024**		0.592**	0.015**	0.013**			-0.073**
Haryana	0.015**							
Karnataka				0.019**		0.030**	0.027**	
Maharashtra	0.016**							-0.047**
Orissa	0.022**	-0.227*					0.017**	

(* Significant at 1% level; ** Significant at 5% level) – Regression coefficients not significant even at 0.05 level are not shown in the table.

any state. Student-time spent on 'mechanical learning' and 'class management' activities both had significant positive effect on achievement in mathematics only in Karnataka. Students' 'off task' time had negative effect on achievement in Assam and Maharashtra. Teacher's status (Regular/ Para) and class type (Monograde/ multigrade) and students passive participation in learning activities were not found to be significant in any of the five states.

7.5 Summary

(i) The analysis attempted exploration of relationship between time spent by teachers and students on different activities inside classroom and the students' achievement scores in tests of language and mathematics. Students of grade IV were administered locally available tests in language and mathematics. The mean score in language varied from 49.3 in Orissa to 61.0 in Assam and the same in mathematics varied from 44.8 in Orissa to 59.2 in Assam.

(ii) Two-level HLM analysis was used to estimate separately the contribution of time spent on different classroom activities of teachers and students to standardized scores in language and mathematics. The first level variables included in the analysis were students' attendance rate and their gender. Students' attendance rate was found to be contributing significantly to language and as well as to mathematics achievement in all the states except in Karnataka. 'Gender' made contribution to the variation in language scores in Maharashtra where girls, on average, scored more than boys whereas boys scored more than girls in mathematics in Orissa. In other states there was no significant gender related difference in achievement.

(iii) The four class/ school level variables included in the analysis are school location (urban/ rural), percentage of active students in the class, teachers' status (para/ regular teachers) and teaching environment (multi /mono grade teaching). Students of urban schools, on the average, scored higher than those of rural schools in mathematics only in Assam. Schools in which percentage of 'active' students was more, showed better performance in both subjects in Assam and Karnataka but not in other states. Schools of Haryana showed the same trend in language achievement but no such association was found in either subject in Maharashtra and Orissa. Students' achievement in language was higher in the classes taught by para teachers compared to those taught by regular teachers in Haryana. But no such trend was visible in other states.

(iv) There was no consistent trend across states in contribution of teachers' classroom activities to students' achievement in either subject. The same was the case in respect of students' classroom activities. Only the students' time spent on 'Active learning' showed positive impact on achievement in one or two states and the same was true for time spent on passive learning. 'Off-task' time of both teachers and students had negative effect on students' achievement in some states but no significant effect in others.

(v) The percentage of active students in class had significantly positive association with students' achievement in either subject, but again this was so only in some of the states.

(vi) Teachers' time spent on student-centric or teacher-centric activities and student-time spent on Active learning or Passive learning have some impact on students' learning but the HLM analysis has shown significant contribution of these variables only in some states but not uniformly across all the states. Apparently other school and teacher variables as well as student variables that could not be controlled made greater contribution to achievement than the teachers' and students' time spent on specific teaching/ learning activities.

Annex A

Table A1: Teachers' time (in %) spent on different activities of category 1 according to states, subject and grades

State	Subject	Grade	Providing feedback	Asking questions	Replying questions /providing clarifications	Demonstrating /helping use of TLM	Project work / creative activity
Assam	Lang	II	4.4	10.3	2.1	4.4	0.2
		IV	4.7	9.8	1.5	2.9	0.2
		VI	**4.4**	**8.5**	**2.2**	**2.7**	**0.2**
	Math	II	7.0	12.9	2.1	6.5	0.9
		IV	6.4	11.4	1.5	7.6	0.6
		VI	**7.8**	**12.4**	**1.5**	**7.6**	**0.2**
	EVS	IV	3.6	12.7	2.0	12.0	0.9
	S.S.	VI	**6.3**	**13.9**	**1.5**	**15.1**	**0.5**
	Science	VI	**5.9**	**14.4**	**2.7**	**6.8**	**0.2**
Haryana	Lang	II	2.9	13.0	2.6	1.4	0.3
		IV	1.0	14.1	3.1	0.9	0.2
		VI	**0.7**	**16.7**	**2.9**	**0.7**	**0.6**
	Math	II	3.1	9.0	2.6	1.9	0.8
		IV	1.9	10.7	3.1	1.1	0.3
		VI	**1.0**	**15.7**	**1.7**	**2.4**	**0.5**
	EVS	IV	2.2	17.1	2.0	2.6	0.7
	S.S.	VI	**2.1**	**20.5**	**2.6**	**3.3**	**0.0**
	Science	VI	**1.9**	**20.5**	**2.4**	**5.2**	**0.7**
Karnataka	Lang	II	4.2	16.5	2.1	4.6	1.0
		IV	3.7	16.9	3.2	5.5	1.3
		VI	**4.8**	**13.5**	**3.0**	**4.8**	**1.5**
	Math	II	5.1	14.1	3.4	14.4	2.3
		IV	6.4	12.9	3.3	12.7	2.0
		VI	**5.5**	**13.0**	**2.3**	**13.3**	**2.9**
	EVS	IV	4.3	18.2	3.3	10.5	1.
	S.S.	VI	**4.3**	**17.8**	**3.5**	**13.3**	**2.1**
	Science	VI	**4.5**	**20.0**	**3.0**	**11.5**	**3.0**
Maharashtra	Lang	II	3.1	16.2	3.0	9.0	0.2
		IV	1.9	16.4	3.3	6.4	0.2
		VI	**1.5**	**16.3**	**3.8**	**6.5**	**0.3**
	Math	II	4.1	14.4	3.5	15.5	0.5
		IV	4.2	13.3	3.8	10.2	0.5
		VI	**4.0**	**15.8**	**3.0**	**11.8**	**0.3**
	EVS	IV	1.4	19.7	3.2	13.6	0.2
	S.S.	VI	**2.8**	**20.8**	**3.5**	**15.0**	**1.0**
	Science	VI	**1.3**	**17.5**	**2.5**	**14.5**	**0.0**
Orissa	Lang	II	2.1	10.5	2.3	6.3	0.3
		IV	2.5	11.1	2.7	5.3	0.3
		VI	**4.8**	**14.0**	**4.0**	**5.0**	**0.0**
	Math	II	5.1	11.1	3.3	9.7	0.3
		IV	3.5	12.0	2.6	7.3	0.1
		VI	**1.5**	**12.5**	**2.8**	**8.8**	**0.0**
	EVS	IV	3.1	16.8	2.4	8.7	0.5
	S.S.	VI	**1.3**	**12.5**	**2.8**	16.5	0.0
	Science	VI	2.8	12.8	0.5	7.0	0.0

Table A2: Teachers' time (in %) spent on different activities of category 2 according to states, subject and grades

State	Subject	Grade	Lecturing / Verbally Explaining	Writing on blackboard & explaining	Reading from book	Giving Dictation	Observing / supervising student activities
ssam	Lang	II	17.6	14.7	15.3	2.9	13.9
		IV	19.1	15.2	15.9	2.3	16.7
		VI	25.4	12.2	14.6	2.9	13.9
	Math	II	13.3	23.2	1.4	0.3	12.6
		IV	12.7	26.1	1.7	0.6	15.2
		VI	10.0	32.0	1.2	1.0	11.5
	EVS	IV	18.5	16.8	8.3	1.7	11.2
	S.S.	VI	19.8	23.2	3.9	0.7	6.3
	Science	VI	24.6	15.1	15.4	1.0	5.9
ryana	Lang	II	10.7	19.6	14.3	4.6	10.3
		IV	17.0	16.5	13.9	2.0	12.8
		VI	19.0	20.0	17.1	2.9	5.7
	Math	II	7.9	29.5	0.6	4.9	11.8
		IV	10.5	32.0	2.9	3.4	11.4
		VI	11.2	35.2	3.3	5.0	6.4
	EVS	IV	20.8	15.9	12.7	2.2	12.7
	S.S.	VI	29.5	15.5	8.1	3.1	5.7
	Science	VI	25.0	16.9	5.7	2.1	8.8
nataka	Lang	II	16.6	15.6	15.6	3.4	9.3
		IV	17.0	12.7	18.2	3.0	7.1
		VI	17.8	16.5	16.3	1.5	9.3
	Math	II	12.8	19.6	0.6	2.6	8.7
		IV	10.8	25.7	1.3	1.1	6.4
		VI	12.5	28.5	1.0	1.3	6.5
	EVS	IV	23.2	19.2	3.2	1.7	3.4
	S.S.	VI	17.5	23.0	4.8	1.8	2.5
	Science	VI	16.8	20.0	4.5	2.0	3.5
arashtra	Lang	II	19.2	16.5	9.6	2.4	5.5
		IV	21.3	17.2	15.0	1.8	3.4
		VI	24.0	16.0	13.8	2.3	5.3
	Math	II	13.7	21.6	3.5	3.1	6.0
		IV	13.3	22.7	3.9	3.5	6.9
		VI	13.3	27.3	3.0	4.3	6.3
	EVS	IV	21.4	18.3	5.8	2.0	2.8
	S.S.	VI	19.0	21.0	3.0	2.8	2.5
	Science	VI	24.5	23.0	4.3	2.0	2.5
Orissa	Lang	II	13.7	9.3	8.4	1.1	19.4
		IV	16.9	11.0	10.0	1.4	17.2
		VI	17.8	11.3	9.0	1.3	14.5
	Math	II	10.0	14.7	1.6	0.0	19.3
		IV	9.3	18.7	2.2	0.4	17.9
		VI	10.5	20.3	0.3	0.3	19.8
	EVS	IV	16.6	11.1	2.6	0.1	15.9
	S.S.	VI	20.3	14.0	1.3	0.3	12.3
	Science	VI	17.3	13.5	7.3	0.0	13.0

Table A3: Teachers' time (in %) spent on different activities of category 3 according to states, subject and grades

State	Subject	Grade	Giving homework or assignments	Correcting home work or test papers	Encouraging one or more students
Assam	Lang	II	7.3	1.4	1.1
		IV	7.4	0.3	1.1
		VI	8.3	1.2	1.2
	Math	II	10.5	2.4	1.2
		IV	11.2	2.4	0.5
		VI	8.5	2.7	1.5
	EVS	IV	7.7	1.7	1.2
	S.S.	VI	5.4	0.7	1.0
	Science	VI	6.3	0.5	0.7
Haryana	Lang	II	5.9	5.7	1.0
		IV	6.6	4.6	0.9
		VI	8.1	1.9	1.0
	Math	II	9.8	9.5	1.6
		IV	8.7	7.8	1.6
		VI	6.2	6.2	1.2
	EVS	IV	6.9	1.8	0.2
	S.S.	VI	7.1	1.2	0.2
	Science	VI	4.8	0.5	0.2
Karnataka	Lang	II	5.6	0.6	2.2
		IV	5.6	0.4	2.2
		VI	4.8	0.5	2.5
	Math	II	10.0	0.6	2.6
		IV	10.8	0.7	2.8
		VI	8.8	0.8	1.5
	EVS	IV	6.9	0.1	1.5
	S.S.	VI	5.3	0.3	1.8
	Science	VI	5.5	0.0	2.0
Maharashtra	Lang	II	8.5	1.4	1.7
		IV	8.9	0.7	1.0
		VI	4.8	0.5	2.5
	Math	II	9.6	0.6	0.9
		IV	12.0	1.1	1.3
		VI	8.8	0.8	1.5
	EVS	IV	8.2	0.4	0.5
	S.S.	VI	5.3	0.3	1.8
	Science	VI	5.5	0.0	2.0
Orissa	Lang	II	13.3	5.6	3.3
		IV	11.4	3.3	2.4
		VI	11.3	1.5	0.5
	Math	II	11.3	4.2	1.6
		IV	12.9	5.9	1.6
		VI	12.3	5.8	1.0
	EVS	IV	9.2	2.8	2.9
	S.S.	VI	9.5	4.0	1.0
	Science	VI	13.0	5.0	2.3

Table A4: Percentage of students' time spent on individual activities for Assam

Set	Activity	Language			Mathematics			EVS		Science
		Grade II	Grade IV	Grade VI	Grade II	Grade IV	Grade VI	Grade IV	Grade VI	Grade VI
1-Active learning	Studying on their own	6.8	6.4	10.8	3.4	2.8	2.9	3.7	3.0	4.6
	Peer learning/ working in small groups	3.0	2.2	0.4	1.9	3.3	1.5	1.1	0.9	0.8
	answering questions	5.5	7.8	3.6	9.0	6.8	7.5	7.5	4.1	6.0
	Seeking clarification	1.1	1.3	1.8	2.5	1.3	0.5	2.3	0.5	0.8
	Using TLE/ TLM	0.8	1.2	0.2	1.5	2.5	2.2	2.9	4.0	1.5
	Project work/ creative activity	0.4	0.9	0.8	1.7	2.6	3.2	1.9	2.8	0.7
	Doing assignments	2.9	3.6	3.3	8.6	11.8	12.3	5.9	7.6	7.1
	Total (Set I)	**20.4**	**23.4**	**20.8**	**28.7**	**31.2**	**30.1**	**25.3**	**22.9**	**21.5**
2-Passive learning	Listening / observing attentively	50.6	52.0	52.9	40.1	44.9	42.3	52.3	53.9	56.1
	Taking dictation	2.1	1.8	1.7	0.7	0.3	2.0	0.8	0.7	0.4
	Total (Set II)	**52.8**	**53.8**	**54.6**	**40.8**	**45.3**	**44.3**	**53.1**	**54.6**	**56.5**
3- Mechanical tasks	Reading aloud	7.1	4.4	4.0	0.4	0.6	0.1	1.3	0.8	0.9
	Copying/ writing orally given work	8.5	9.7	12.7	17.0	15.8	19.2	11.7	12.2	8.5
	Rote memorization	0.2	0.6	0.1	0.0	0.3	0.1	0.0	0.3	0.1
	Total (Set III)	**15.8**	**14.7**	**16.8**	**17.4**	**16.8**	**19.3**	**12.9**	**13.3**	**9.5**
4-Classroom management	Waiting	1.1	1.6	1.0	2.7	1.1	1.0	2.0	2.1	2.7
	being reprimanded	0.1	0.3	0.4	0.1	0.5	0.2	0.2	0.2	0.4
	class management	0.4	0.2	0.2	1.4	0.1	0.3	0.6	0.2	0.1
	Total (Set IV)	**1.6**	**2.1**	**1.6**	**4.2**	**1.7**	**1.5**	**2.8**	**2.4**	**3.3**
5-Off-Task	Unattentive	6.7	3.8	3.8	5.4	3.6	2.7	3.9	4.8	5.9
	Crosstalking	2.3	1.9	1.9	3.0	1.3	2.0	1.7	1.7	2.9
	disruptive acts	0.3	0.2	0.3	0.4	0.2	0.1	0.2	0.1	0.3
	Entering/ goingout	0.2	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1
	Total (Set V)	**9.4**	**6.0**	**6.2**	**8.9**	**5.1**	**4.8**	**5.9**	**6.6**	**9.2**

Table A5: Percentage of students' time spent on individual activities for Haryana

Set	Activity	Language			Mathematics			EVS		Science
		Grade II	Grade IV	Grade VI	Grade II	Grade IV	Grade VI	Grade IV	Grade VI	Grade VI
1-Active learning	Studying on their own	5.2	8.3	4.2	7.6	6.5	4.7	4.1	4.5	2
	Peer learning/ working in small groups	0.8	0.7	0.1	0.6	0.7	0.2	0.5	0.5	[illegible]
	answering questions	5.5	3.4	4.6	2.7	4.0	3.8	5.5	4.2	5
	Seeking clarification	1.2	1.0	0.4	1.2	2.1	0.5	0.8	1.6	0.9
	Using TLE/ TLM	0.3	0.7	0.0	0.8	0.4	0.8	0.8	0.8	1.5
	Project work/ creative activity	0.8	0.4	0.0	0.5	0.6	1.1	1.3	0.2	[illegible]
	Doing assignments	3.6	5.7	3.6	14.8	13.4	5.7	6.2	3.1	2.0
	Total (Set I)	17.5	20.2	12.9	28.3	27.7	16.7	19.2	14.9	[illegible]
2-Passive learning	Listening / observing attentively	36.0	43.9	66.4	25.9	30.9	48.6	50.3	59.4	[illegible]
	Taking dictation	4.1	1.7	2.8	5.2	4.0	5.6	1.8	3.5	[illegible]
	Total (Set II)	40.1	45.6	69.2	31.1	34.9	54.2	52.1	62.8	61.5
3- Mechanical tasks	Reading aloud	11.3	6.2	1.0	1.6	0.8	0.1	5.5	1.0	1.9
	Copying/ writing orally given work	16.1	14.0	9.7	22.2	21.5	16.1	9.6	7.9	9.2
	Rote memorization	1.9	0.5	0.5	1.0	0.8	0.4	1.4	0.3	1.9
	Total (Set III)	29.2	20.7	11.2	24.7	23.2	16.5	16.5	9.2	13.0
4-Class management	Waiting	3.9	4.7	3.8	8.0	6.7	8.1	5.9	8.6	7.9
	being reprimanded	0.2	0.1	0.0	0.1	0.1	0.3	0.1	0.1	0.1
	class management	0.2	0.0	0.0	0.7	0.3	0.2	0.0	0.1	0.2
	Total (Set IV)	**4.3**	**4.9**	**3.8**	**8.7**	**7.1**	**8.5**	**6.0**	**8.8**	**8.2**
5- Off-Task	Unattentive	4.9	4.3	1.8	3.9	4.5	2.1	3.5	2.9	2.3
	Crosstalking	3.5	3.5	0.9	2.9	2.2	1.8	2.2	1.0	1.4
	disruptive acts	0.2	0.6	0.1	0.2	0.3	0.1	0.3	0.3	0.2
	Entering/ goingout	0.2	0.2	0.0	0.3	0.2	0.1	0.2	0.1	0.1
	Total (Set V)	**8.8**	**8.6**	**2.8**	**7.2**	**7.2**	**4.0**	**6.1**	**4.3**	**3.9**

Table A6: Percentage of students' time spent on individual activities for Karnataka

Set	Activity	Language			Mathematics			EVS		Science
		Gr II	**Gr IV**	**Gr VI**	**Gr II**	**Gr IV**	**Gr VI**	**Gr IV**	**Gr VI**	**Gr VI**
1-Active learning	Studying on their own	3.4	4.3	4.5	2.9	2.8	2.8	2.6	3.2	3.8
	Peer learning/ working in small groups	2.6	1.1	1.1	2.8	2.9	2.9	3.2	2.4	0.8
	answering questions	9.0	8.9	7.2	9.3	8.3	6.9	10.7	7.2	10.3
	Seeking clarification	1.8	1.3	2.0	3.5	2.6	3.1	2.1	3.2	1.9
	Using TLE/ TLM	1.5	2.1	3.6	4.6	4.3	2.5	2.5	2.7	4.3
	Project work/ creative activity	1.4	2.3	1.3	2.9	2.5	3.0	1.6	1.8	1.9
	Doing assignments	1.5	1.0	0.4	10.3	5.1	7.2	2.5	1.0	1.5
	Total (Set I)	**21.3**	**21.0**	**20.1**	**36.4**	**28.5**	**28.6**	**25.1**	**21.6**	**24.4**
2-Passive learning	Listening /observing attentively	41.1	46.0	49.4	38.2	43.3	44.4	45.4	52.4	47.4
	Taking dictation	2.6	2.5	1.3	1.6	2.0	1.4	1.4	2.5	1.9
	Total (Set II)	**43.7**	**48.4**	**50.8**	**39.8**	**45.3**	**45.9**	**46.8**	**54.9**	**49.3**
3- Mechanical tasks	Reading aloud	12.3	9.6	6.2	2.2	1.0	1.5	2.0	0.5	1.1
	Copying/ writing orally given work	5.8	4.9	8.2	6.2	8.9	12.9	8.5	7.8	6.1
	Rote memorization	0.6	0.4	0.4	0.3	0.6	0.1	0.7	0.5	0.2
	Total (Set III)	**18.7**	**14.8**	**14.8**	**8.7**	**10.4**	**14.5**	**11.2**	**8.8**	**7.5**
4-Class management	Waiting	2.8	4.2	4.3	3.1	3.6	2.8	4.8	4.8	5.3
	being reprimanded	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.3
	class management	0.8	2.1	1.5	0.3	0.7	0.5	0.4	0.6	1.9
	Total (Set IV)	**3.7**	**6.4**	**5.8**	**3.5**	**4.4**	**3.4**	**5.3**	**5.5**	**7.6**
5- Off-task	Unattentive	7.6	6.9	5.2	8.0	7.0	4.2	7.7	6.6	8.4
	Crosstalking	3.6	1.3	2.0	2.3	2.2	1.6	2.0	1.3	1.5
	disruptive acts	1.1	0.9	1.2	0.9	1.8	1.8	1.6	1.3	1.2
	Entering/ goingout	0.4	0.2	0.0	0.4	0.5	0.1	0.2	0.0	0.1
	Total (Set V)	**12.6**	**9.3**	**8.5**	**11.6**	**11.4**	**7.7**	**11.5**	**9.2**	**11.2**

Table A7: Percentage of students' time spent on individual activities for Maharashtra

Set	Activity	Language			Mathematics			EVS		Science
		Grade II	Grade IV	Grade VI	Grade II	Grade IV	Grade VI	Grade IV	Grade VI	Grade VI
1-Active learning	Studying on their own	4.3	4.6	3.8	4.3	5.6	2.4	3.2	2.3	1.3
	Peer learning/ working in small groups	0.9	0.5	0.3	2.0	1.7	1.7	0.4	1.1	0.8
	answering questions	7.3	8.2	7.8	7.7	7.1	6.9	10.6	8.2	7.5
	Seeking clarification	1.9	2.2	1.9	1.9	3.1	2.4	1.9	1.5	1.4
	Using TLE/ TLM	2.5	2.1	1.2	5.0	4.0	1.9	3.3	3.3	2.0
	Project work/ creative activity	0.3	1.0	0.0	0.7	0.9	0.4	0.2	1.4	0.0
	Doing assignments	3.5	2.9	0.3	5.0	7.0	2.7	3.5	1.5	0.9
	Total (Set I)	**20.8**	**21.5**	**15.3**	**26.6**	**29.4**	**18.4**	**23.0**	**19.3**	**13.9**
2-Passive learning	Listening /observing attentively	50.8	50.6	59.2	45.8	41.3	52.4	52.0	55.6	63
	Taking dictation	3.0	2.5	2.5	3.4	3.4	3.4	2.4	2.5	1.
	Total (Set II)	**53.8**	**53.1**	**61.7**	**49.2**	**44.7**	**55.8**	**54.4**	**58.1**	63
3- Mechanical tasks	Reading aloud	3.5	3.7	2.2	2.6	1.8	1.0	1.6	0.5	0
	Copying/ writing orally given work	9.0	8.0	7.8	8.7	10.4	11.7	7.4	10.3	10
	Rote memorization	0.2	0.2	0.2	0.4	0.1	1.6	0.1	0.0	0
	Total (Set III)	**12.7**	**11.9**	**10.2**	**11.8**	**12.3**	**14.4**	**9.1**	**10.8**	10
4-Class management	Waiting	4.3	3.9	4.8	3.1	4.3	3.7	4.9	4.9	4
	being reprimanded	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0
	class management	1.0	1.2	2.5	1.3	1.4	2.3	1.2	1.6	1.3
	Total (Set IV)	**5.3**	**5.1**	**7.4**	**4.6**	**5.7**	**6.0**	**6.2**	**6.5**	**6.0**
5- Off-Task	Unattentive	3.8	5.0	3.6	4.1	4.2	3.1	4.5	2.9	3.2
	Crosstalking	2.4	2.7	1.3	2.8	3.0	1.7	2.2	1.8	1.5
	disruptive acts	0.8	0.7	0.5	0.8	0.6	0.4	0.4	0.5	0.9
	Entering/ goingout	0.4	0.1	0.0	0.2	0.1	0.1	0.2	0.1	0.0
	Total (Set V)	**7.5**	**8.5**	**5.5**	**7.9**	**7.9**	**5.3**	**7.4**	**5.3**	**5.5**

Annex B

CODING PROCEDURE FOR TS4 FORM

1.0 Description of Activities in the Class-room

Students' activities in classrooms are ge lly performed as per school timetable an t too under direct control or supervision of acher. Some students do some thing else or ain inactive. In order to capture these, cla om environment, activity of every student an t of teacher, and their interaction are pro ed to be included in the study. As far as rec ing of classroom environment is concerned a se rate schedule has been developed for this pu e, Teacher's and students' activities in the clas om are listed below, although both the ' acti es are imbibed.

1.1 eachers Activities

i) ecturing/ verbally explaining: Teacher mparting instructions orally

ii) Writing on blackboard and explaining

iii) eading from book: Teacher reading loud the connected matter from the ext.

iv) Giving dictation:

v) Giving homework or assignment: Teacher is giving some assignment to students orally or by writing on blackboard

vi) Correcting home work or test papers

vii) Providing feedback to individual or group of students

viii) Asking questions

ix) Replying question / providing clarifications

x) Demonstrating/ helping use of TLM/ TLE

xi) Project work/creative activity

xii) Observing/ supervising students' activity

xiii) Encouraging one or more students

xiv) Scolding / Punishing students

xv) Class management

xvi) Attending to visitor/ social interaction/ personal work

xvii) No activity/out of classroom

1.2 Students Activities

i) Listening attentively to teacher: Students are listening to the teacher with attention, when teacher is lecturing or explaining verbally or using TLM/TLE or Blackboard

ii) Studying on their own : Silently reading/writing in the notebook from text book or doing some other academic activity of their own when teacher is either not in the class or doing some work not related to teaching

iii) Reading aloud to class /alone: : One or more students or teacher reading aloud. Students take turns reading loudly the connected matter from the text, the remaining students may follow silently or loudly from their own text.

iv) Taking dictation

v) Copying : Students are copying the work or exercise from the blackboard when teacher is writing on the blackboard and explaining at the same time. . If one or more students are asked to read loudly the content on blackboard, this activity is also to be included here.

vi) **Rote Memorisation :** One or more students are verbally involved in reciting table, reinforcing, repetitive work is included here.

vii) **Peer learning/working in small groups:** Students individually or in groups are engaged in some form of learning activity which requires help from class fellow or teacher to analyse information, solving problem, etc.

viii) **Answering Question:** Students answer question regarding oral/or written lecture material, assignments, problems, mathematical sums, assignment or use of TLM/TLE. These may take place between students under supervision of teacher. This situation is to be included here.

ix) **Seeking clarifications:** Students are asking questions or seeking clarification when teacher is explaining orally or writing on blackboard.

x) **Using TLM/TLE:** TLM/TLE is used individually or in groups by students e.g. solving problems or teacher is helping them individually.

xi) Engaged in Project work/creative activity

xii) **Doing Assignment**: Students are given some assignments orally or by writing on blackboard. If written or oral test is being taken, it should be included here.

xiii) **Waiting for teacher's attention:** Students are waiting for their teacher while teacher is busy attending to other student/s or person.

xiv) Being reprimanded:

xv) **Assisting in classroom manageme** Students undertaking part in c management activities while the teach in /out of the class.

xvi) **Un-attentive** :Students are not atten or doing some unrelated activity or doing any activity or students enter in leave the class

xvii) **Cross talking** :Discussing on issues n related to the topic being taught.

xviii) **Engaged in disruptive activitie** Teasing, quarrelling with fellow stude or shouting in the class

xix) **Entering into or going out of cla** Student/s either entering class or leavi class room while the class is being held

2.0 Approach to within classroom observation

(i) Every class is to be observed for 30 minutes These 30 minutes are to be divided int 10 intervals of time. Duration of eac interval will be 3 minutes.

(ii) The class activities are to be recorded by using two modes namely (i) video camera recording and (ii) recording by an observer. Both the methods have certain advantages and limitations also. Each is to be used to complement and supplement the other. The activities captured using video camera has an advantage of recording activity in every detail. Classification of activities and their aggregation is quite time consuming and cumbersome. On the other hand, recording of activities by an observer is done using a pre-defined classification. It leads to loss of some details of the activities

3 3 Recording by observer

(Teachers' and students' activities are to be observed at an interval of 3 minutes. Ten such observations are to be made. Let us call each of them as snapshot. All the 10 snapshots are to be observed and then recorded without having any break in between two snapshots. The observer for each snapshot, starts observation and proceeds clockwise covering the teacher and students for two minutes and then record the observation.

(i The observations are to be recorded in a two dimensional Grid enclosed (TS4).

(iii) The first column of the Grid contains teachers' activity. The remaining columns are allocated to students' activity.

(iv) Recording of activities is to be made in one row only in which teachers' activity has been ticked.

(v) The cells of the row beyond second column are to have number of students. As writing of exact number of students in a cell needs more time than the allocated time (1 minute) for recording into the grid. To resolve this difficulty, the following coding procedure needs to be used.

	Students number	**Code**
(a)	One-student	I
(b)	2 to 5 students	S
(c)	6 to 10 students	M
(d)	11 to the whole class minus 1	L
(e)	Every one	A

Annex C

STUDY OF STUDENTS' TIME-ON-TASK IN PRIMARY AND UPPER PRIMARY SCHOOLS

SCHOOL SCHEDULE

1 State: ____________________ ☐ 2 District ____________________

3 Name & address of school____________________ ☐

4 Date/s of visit: ____________________

5 School Location Rural(1); Urban(2) ☐

6 Level of School Primary: (1); Upper Primary: (2) ☐

7 Is there Multi-grade teaching in the school (Yes: 1; No:2) ☐

8 Number of classrooms in use (including *verandah* if used for teaching) ☐

9 Facilities in school (Available:1; Not Available: 2)

a.	Usable toilets/ Urinals for:	i) All Students	☐
b.		ii) Girls	☐
c	Drinking Water		☐
d.	Playground/open space for play		☐

10

	Do you have any library books in the school?	*(Yes: 1; No: 2)*	☐
	(If Yes; answer 10.a to 10.b; or else go to question no.11)		
a.	Are the books issued to the students?	*Frequently: (1); Sometimes: (2); Never (3)*	☐
b.	Are students allowed to read in the school?	*Frequently: (1); Sometimes: (2); Rarely: 3)*	☐

11 Class wise number of sections and enrolment as on

Class	No of sections	Total enrolment			Enrolment		Total Students Attendance		
		Boys	Girls	Total	SC	ST	Day 1	Day 2	Day 3
I									
II									
III									
IV									
V									
VI									
VII									
VIII									

12 Number of teachers (including Head Teacher) in position:

		Male	Female	Total
a.	Regular Teachers			
b.	Para teachers			

13 Give the number of teachers (a) present (b) absent due to the following reasons on the days of investigator's visits:

Reason 1: Being on leave

Reason 2: Being deputed for teacher training or any other work related to education

Reason 3: Being on duty for some work unrelated to education (e.g. for election, economic or other survey, Polio campaign etc.)

Reason 4: Being absent without intimation

Day of Visit	Date	No. of teachers		Number of teachers absent due to			
		Present	Absent	Reason 1	Reason 2	Reason 3	Reason 4
Day 1							
Day 2							
Day 3							

Opening time of school: ________________ ☐

Closing time of school : ________________ ☐

Time allowed for morning assembly: ________________ ☐ minutes

Time allowed for recess/mid-day meals: ________________ ☐ minutes

Teaching-Learning Materials (TLM)/ Teaching Learning Equipment (TLE) in the school

(Available: 1; Not Available: 2)

a. Walls with blackboard usable by children ☐

b. Learning/ Manipulative materials that children can handle ☐

c. Outdoor games material(e.g. football) ☐

d. Mathematics kit ☐

e. Science kit ☐

f. Any other: (specify________________) ☐

Given below are the few strategies which are commonly adopted by schools when a teacher is absent. Their codes are given in brackets

Some other teacher is assigned to the class: (1)

Another teacher is asked to look after the class in addition to his/her own: (2)

Some community members are invited to take class: (3)

Students are asked to remain in class and study on their own: (4)

Class monitor or student of a higher class is asked to handle the class: (5)

Students are assigned some non-academic work (eg .Gardening, cleaning) (6)

Students of the class are allowed to play/ go home (7)

Any other: specify (________________): (8)

Write the codes of the common strategies that your school adopts when a teacher is absent

a. Most often ☐

b. Sometimes ☐

17 (a) No. of working days in the last year as prescribed by the district authorities (2005-06) ☐

(b) On how many days was the school actually open during 2005-06? ☐

(Look up the information in the school register) ☐

18 If the school remained closed during the prescribed working days, how many days it was closed due to the reasons listed below:

	Reason	**No of days**
a.	Local events/ festivals	
b.	Natural disasters	
c.	Elections	
d.	Special drives (polio etc)	
e.	Any other : Specify_______________	

(*Write 0 if the school was not closed for any reason)*

19 No. of working days (in 2005-06)	
No. of days used for functions, cultural programmes, sports etc.	
No. of days used for examinations	
No. of days used for classroom teaching	
Total (ii-iv)	

20 Has the school made special arrangement for remedial teaching of weak students of your class? Yes (1) ; No (2) ☐

a) If yes, mention the kind of strategy used?

Strategy	No. of students	Average time devoted (in hours) per week
Giving them extra attention within the class		
Helping them in recess or other time		
Giving them additional tests suitable for their level		
Taking extra classes outside school hours		
Any other (specify)		

b) Is there is a system of organizing extra classes for weak students during holidays or vacations? Yes (1) ; No (2) ☐

c) Were the weak students identified on the basis of class test? Yes (1) ; No (2) ☐

d) Class-wise details of extra classes held in 2006

	Class							
Details of -	I	II	III	IV	V	VI	VII	VIII
No. of students who were required to attend these classes								
No. of days on which these classes were held in 2006								
Average no. of hours per day								
Was any extra enumeration paid to the teacher? Yes(1), No (2)								

Signature of Head Teacher

Signature of Investigator

STUDY OF STUDENTS' TIME-ON-TASK IN PRIMARY AND UPPER PRIMARY SCHOOLS

TEACHER'S SCHEDULE
(For Teachers teaching classes II, IV and VI)

1 State: ________________ ☐ 2 District ________________

3 Name & address of school________________ School code ☐

4 Teacher Name:________________ Teacher Code* ☐

5 Gender *(Male:1 ; Female:2)* ☐

6 Type of Teacher *(Regular:1 ; Para:2)* ☐

7 Educational Qualification *(Below Secondary:1; Secondary:2; Sr. Secondary:3; Graduate/ Post Graduate :4)* ☐

8 Teacher Training *(No training:1; JBT/ETT/STC/Dip.Ed:2; B.Ed/:3;)* ☐

9 Social Group *(SC:1 ; ST:2 ; OBC : 3; Other : 4)* ☐

10 Approximate time taken to reach school from residence *(Less than 30 min: 1; 30 min or more but less than 1 hour: 2 ; 1 to 2 hours: 3: More than 2 hours: 4)* ☐

11 Total teaching experience (in complete years) ☐

1 Classes you have been teaching in this school this year: (Encircle Tick whichever is applicable)

Classes	I	II	III	IV	V	VI	VII	VIII
No. of students								

1 Are you teaching the following subjects in grades II, IV and VI? (Yes:1; No: 2)[1]

Grade

II	Language	☐	Mathematics	☐				
IV	Language	☐	Mathematics	☐	EVS	☐		
VI	Language	☐	Mathematics	☐	Science	☐	Social Science	☐

1 a) Number of working days during the current academic year?

1 b) How many days in this session you did not teach due to such reasons as given below? (Base this information from school records/log book)

	Reasons	**No. of days**
i.	Being on leave	
ii.	Being on official duty not related to education e.g. election work, Polio mission	
iii.	Attending training or meetings related to education	
iv.	Being on other duties related to education e.g. enrolment drive, child census, Text books distribution, Admission related work; MDM related works	
v.	Being busy with other administrative work (salary collection, preparation of statistics or other information for the Education Department; completing school registers, monitoring forms etc)	
	Total	

---

* Teacher code will begin with 1 in every school.

15 On a typical day, how much of average time (in minutes/hrs.) do you spend on the following activities?

i.	Actual classroom teaching	
ii.	Lesson planning	
iii.	Evaluating answerscripts	
iv.	Remedial teaching of weak students	
v.	Giving and correcting home work	
vi.	Providing data and other information	
vii.	Mid Day Meal distribution	
viii.	Maintenance of Attendance Register and other registers	
ix.	Any other: (Specify)____________________	
x.	**Total hours (i to ix)**	

16 Do you provide remedial teaching to the students? (Yes: 1; No: 2) ☐

17 If yes, then which of the following measures do you adopt and how much time do you devote to them?

	Measures	***(Yes: 1; No: 2)***	**Hours per week**
i.	Paying extra attention in the class itself		
ii.	Helping students within school hours out of the class		
iii.	Taking extra class outside school hours		

18 Do you have your own copy of teacher guide? *(Yes: 1; No: 2)* ☐

19 How frequently do you use the following items for classroom teaching?

	Materials	***Frequently: 1; Sometimes: 2; Rarely*** ***Not available : 4***
i.	Teacher guide/ teacher support materials	
ii.	Dictionary	
iii.	Learning materials which children can handle themselves	
iv.	Mathematics kit	
v.	Science kit	
vi.	Story books/ Newspapers/ Magazines	

20 How do the factors listed below affect your day-today teaching?

	Factors	**To large extent: 1; To some extent: 2; Not much:3; NA:4**
i.	Having to teach more than one class at a time	
ii.	Insufficient space in the classroom	
iii.	Lack of interest in studies among children	
iv.	Lack of motivation/interest among parents	
v.	Large classes	
vi.	Non- availability of learning materials	
vii.	Irregular attendance of children	
viii.	Delay in receiving text books	
ix.	Interference by Head teacher/ management	
x.	Too much in service training	
xi.	Posting in the present school against your wishes	
xii.	Assignment of non-teaching work	
xiii.	Any other (specify__________________)	

NA =Not applicable

2 During 2005-06 how many days of training did you receive at

i RC ☐
i RC ☐

Did you organize co-curricular activities for your students this year (Jan – Dec 2006)? Yes/No If yes, mention the activities, time devoted to them and participation rate of students.

	Activity	No. of days	Average no. of hours per day	Participation rate (% of students of class who took part
	Cultural programmes/activities			
i.	Excursions			
i.	Games/Sports			
iv.	Art & Craft			
v.	Music, Dance & Drama			
vi.	Library			
vii.	Yoga, Meditation			
iii.	Social Work			

cher's signature with date: ______________________

STUDENTS' TIME-ON-TASK IN PRIMARY AND UPPER PRIMARY SCHOOLS

Investigator's School Observation Schedule

1. State ______________ ☐ 2. District ______________

3. Village Town ______________ ☐ 4. School ______________ ☐

5. Name of Investigator ______________ ☐

6. Was the school a multi-grade school ? Yes (1); No (2) ☐

7. Condition of approach road Good(1); Bad(2) ☐

8. Condition of school building
Well maintained (1); Needs minor repair (2); Needs major repair (3); No building (4) ☐

9. Classes are over crowded None (1); Some (2); All (3) ☐

10. Classrooms are well ventilated and get sufficient natural light
All (1); Some (2); None (3) ☐

11. School surroundings are clean and well kept. Yes (1); No (2) ☐

12. Sufficient furniture / Tat-pattis for students
Yes (1); No (2)

13. If there is school assembly, activity/ ies taking place during school assembly
Prayer only (1); Prayer with P.T. (2); Prayer & News (3) ; Prayer, PT& News(4)
(write 0 if there is no school assembly) ☐

14. Is there a school time table for different classes which is followed in practice?
Yes (1); No (2); Flexible time table (3)

15. What are the other activities in which teachers were engaged during school hours besides teaching ? ☐

Administrative work such as completing registers etc ☐

Planning for /organizing school activity ☐

Discussing school related problem ☐

Doing some personal work ☐

Social interactions (5) ☐

16. Was there any class/es unattended by teacher in the school?
Yes (1); No (2) ☐

17. Was there any class/ classes where alternate arrangement was made as the teacher concerned was not present that day ? ☐
Yes (1); No (2)

18. Actual time spent on Mid-day meal (in minutes) ☐

19. Was there any difference in school duration for the student of different classes? ☐

Yes (1); No (2)

If Yes, give details

Class		**School timings**	
From	To	From	To

Activities of students:

Session	Activities in which they are engaged	How many students are outside the classes while teaching is going on in the classes		
		Within an hour after the opening	After recess	An hour before closing time
orenoon	*Curricular/co-curricular*			
	School management			
	Other activities such as Playing, Socialising,idle, etc			
fternoon	*Curricular/co-curricular*			
	School management			
	Other activities such as playing, socialising,idle etc.			

Signature of Investigator: ____________________

Date : __________

STUDY OF STUDENTS' TIME-ON-TASK IN PRIMARY AND UPPER PRIMARY SCHOOLS

Investigator's Classroom Observation Schedule

1 State: ______________________ ☐ 2 District ______________________

3 Name & address of school______________________________ School code ☐

4 Name of Investigator ____________________ ☐ 5. Class Observed (2/4/6) ☐

6 Was the class a multi-grade class? Yes (1); No (2) ☐

7 Number of students present in the class(es) observed (If multi-grade, give no. of students in each grade)

Grade	I	II	III	IV	V	VI	VII	VIII
No. of students								

8 Name of Teacher ______________________________ ☐

9 Subject taught by the teacher in the class : Language (1), Mathematics (2), Social Studies (3), Science (4) ☐

10 Number of students present in the class Boys ☐ Girls ☐ Total ☐

11 Duration of class (in minutes)

12 Place where the class is held: Classroom(1); Verandah(2); Open Space(3) ☐

13 Sitting space for students in classroom: Adequate(1); Not adequate (2) ☐
(If class is held in open space, write code (3))

14 Does the classroom have sufficient light? Yes (1); No (2); Not applicable (3) ☐
(If the class is held in the open on the day of observation give information for the classroom/veranda allotted to this class)

15 Seating arrangement of students: In columns/rows (1); In groups /semi circle (2); In haphazard manner (3) ☐

16 Were the girls sitting separately in the class Yes (1); No (2); Not applicable (3) ________

17 Students were in school uniform Most of them (1); Some of them (2); None (3) ☐

18 Type of blackboard in use: Wall (1); Tripod (2); Hanging (3); None (4) ☐

19 Quality of blackboard & chalk (Readability of whatever is written): Satisfactory (1); Poor (2) ☐

20 Charts, maps, pictures displayed on walls in classroom: Several(1); Few(2); None(3) ☐

21 Clarity of speech: Very good (1); Moderately good (2); Poor (3) ☐

22 Pronunciation of words: All correct (1); Partly correct(2); Mostly incorrect (3) ☐

23 Legibility of writing on blackboard: Very good (1); Moderately good (2); Poor (3) ☐

24 Behaviour with students: Very strict (1); Somewhat strict (2); Friendly & informal (3) ☐

25 Most of the time while teaching the teacher : kept sitting in chair (1); kept standing (2); moved about in the class (3) ☐

6 Teacher's questions were addressed to - All students (1); Only a few students in the front row (2); Only a few students but from whole class (3); None (4) ☐

7 Teacher's proficiency in the subject: Very good (1), Moderately good (2); Rather poor (3) ☐

8 Did the teacher encourage students to ask questions? Yes(1); No (2) ☐

9 Did the teacher pay equal attention to boys and girls? Yes(1); No (2); Not applicable (3) ☐

0 In a multi-grade setting, what strategy of teaching-learning did the teacher adopt?

Taught one grade and gave assignment to students of other grades (1);

Taught same subject to all grades simultaneously but asked questions of different difficulty levels from students of different grades (2);

Asked good students to take care of other students (3);

Any other (specify)______________________________(4) ☐

1. During your observation of the class, did any person visit the class room?

Yes(1); No (2) ☐

32. If yes, what did the teacher do?

Attended the person in the class (1);

Left the class to attend the person (2);

Requested the person to come afterwards (3)

3. Time spent with the person in/outside the classroom (in minutes). ☐

34. While teaching, did the teacher try to find out whether most students were learning what was taught and then re-inforcing his/her teaching to make them learn? Yes (1); No (2) ☐

35. If yes, state what did the teacher actually did for re-inforcement?

36 Did the teacher give special attention to weak students while teaching in order to make them understand? Yes(1); No(2) ☐

37 If yes, state what the teacher specifically do for those students?

38 Students behaviour in the class were generally
well disciplined (1); reasonably disciplined (2); indisciplined (3) ☐

39 The class on the whole was
quiet (1); noisy (2) ☐

40 Students appeared to be:
free with teacher (1); fearful of teacher and suppressed (2) ☐

41 Students in the class spoke
when asked or by raising hand (1); out of turn (2)

42 Did the girls interact with the teacher to the same extent as boys?
Yes (1); No (2); Not applicable (3) ☐

43 In a multi-grade class what did most of the students do who were not being taught at that time?
Did some work assigned by the teacher (1);
Learnt on their own (2);
Did some work that was not assigned by the teacher (3);
Sat quietly doing nothing or playing games (4);
Any other (specify) --------------- (5);
Not applicable (6) ☐

44. Did you witness any incident which served as an indication that teacher was
able to control the class easily (1) ;
faced some difficulty in controlling the class (2);
not able to control the class (3). ☐

45 Was any student punished during class?
Yes (1); No (2) ☐

46. If yes, what type of punishment was given?
Scolded /humiliated (1);
Physical punishment (beating/slapping etc.) (2); ☐
Sending out of class (3);
Any other (specify)______________________________ (4)

47. Did any incident occurred in the grade which disturbed teaching?
Yes (1); No (2) ☐

48. If yes, mention how much time (in minutes) of the class was taken by such incident? ☐

49. If any project work being done by students during the class observation, describe the project.

If any incident of gender or caste discrimination observed during the class, describe the same.

gnature of Investigator: ____________________

ate : ________

TS - 4

STUDY OF STUDENTS' TIME-ON-TASK IN PRIMARY AND UPPER PRIMARY SCHOOLS

CLASS OBSERVATION SHEET

State Code ☐ School Code ☐ Grade observed ☐ Grade being taught in a Multi-grade class: (Target-1; others-2, All -3 ☐

Subject taught: (Lang-1; Maths-2; EVS/ Science-3; Social Science-4) ☐ Teacher Code ☐ Snapshot No. ☐ Start time ☐

Note: Mark your observation

1. ***by putting (√) in the appropriate row in column 3 for teacher's activity and***
2. ***by encircling the applicable response code in the appropriate column for students' activity***

Sl.No	**1. Teacher's activity**	
i.	Lecturing/ verbally explaining	
ii.	Writing on blackboard and explaining	
iii.	Reading from book/ other material	
iv.	Giving dictation	
v.	Giving homework or assignment	
vi.	Correcting home work or test papers	
vii.	Providing feedback to individual or group of students	
viii.	Asking questions	
ix.	Replying question/providing clarifications	
x.	Demonstrating/ helping use of TLM/TLE	
xi.	Project work/creative activity facilitating, supervising, evaluating	
xii.	Observing/ participating with/ supervising students' activity	
xiii.	Encouraging one or more students	
xiv.	Scolding / Punishing students	
xv.	Class management	
xvi.	Attending to visitor/ social interaction/ personal work	
xvii.	No activity/out of classroom	
xviii	Listening to guest speaker	

Sl.No	**2. Student/s ' activity**	**No. of studen**				
i.	Listening attentively to teacher/ speaker	I	S	M	L	
ii.	Studying on their own	I	S	M	L	A
iii.	Reading aloud to class /alone	I	S	M	L	A
iv.	Taking dictation	I	S	M	L	A
v.	Copying/ following teacher's activity	I	S	M	L	A
vi.	Rote memorization	I	S	M	L	A
vii.	Peer learning/working in small groups	I	S	M	L	A
viii.	Answering question	I	S	M	L	A
ix.	Seeking clarification	I	S	M	L	A
x.	Using TLE/TLM/ students learning presenting/ facilitated by use of TLM	I	S	M	L	
xi.	Engaged in Project work/ creative activity	I	S	M	L	A
xii.	Doing assignment	I	S	M	L	A
xiii.	Waiting for teacher's attention	I	S	M	L	A
xiv.	Being reprimanded	I	S	M	L	A
xv.	Assisting in classroom management	I	S	M	L	A
xvi.	Un-attentive	I	S	M	L	A
xvii.	Cross talking	I	S	M	L	A
xviii	Engaged in disruptive activities	I	S	M	L	A
xix	Entering into or going out of class	I	S	M	L	A

Code**: **1**-One Student **S** – 2-5 students **M** – 6-10 students; **L** - More than 10 but not all, ***A – All

STUDY OF STUDENTS' TIME-ON-TASK IN PRIMARY AND UPPER PRIMARY SCHOOLS

IVth GRADE STUDENTS' RECORD SHEET (TS-5)

1. State: ______________________ ☐ 2 District ______________________

3. Name & address of school____ ☐

4. School Location *Rural(1)/ Urban(2)* ☐

5. Maximum marks: (a) Mathematics ☐ (b) language ☐

6. Students' information

Sl. No.	Students' Name	Learning behavior (Active -1; Passive-2; OffTask* -3)		Marks obtained			
		Mathematics	Language	Mathematics	Language	Mathematics	Language
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							
16.							
17.							
18.							
19.							
20.							
21.							
22.							
23.							
24.							
25.							
26.							
27.							
28.							
29.							
30.							

Off Task; Students who were classified as Reprimanded, Un-attentive, Cross talking, Engaged in disruptive activities, or Entering into/going out of class

एडसिल
edCiL
EdCIL (India) Ltd.
10-B, I.P. Estate, New Delhi-110002